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PROFESSIONAL PREPARATION FOR EDUCATORS OF CRIPPLED CHILDREN

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PROFESSIONAL PREPARATION FOR EDUCATORS OF CRIPPLED CHILDREN

Report of a Special Study Institute*

Hotel Thayer, West Point, New York
December 9-12, 1970

Edited by

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In the conduct of the Institute, we drew heavily on the student and faculty resources of Teachers College, Columbia University. Student performance as recorders was outstanding and critical to the meeting and to the preparation of this report. Personal contributions to the numerous activities required for the realization of the Institute were made by Mrs. Carolyn McCollom, Mrs. Dorothy Eisenlau, Miss Michele Hertzen, Mrs. Rhoda Markowitz, Mrs. Mildred Wald and the late Mrs. Yvetta Cohen. To them, we are deeply appreciative.

To the Discussion Group Chairmen who assumed leadership responsibility throughout the day, and who worked closely with the recorders preparing summaries each evening, we are especially grateful. The cooperation of all participants and their seriousness of purpose was evident throughout the Institute and were essential ingredients. This is their report.

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Introduction

A commitment to improving the education of crippled or other health impaired children brought a wide variety of professional personnel to a national Special Study Institute held in December, 1970. Among the opinions most frequently expressed by the participants were these:

Specialization should be supported only when it is essential to quality programming.

More severely and multiply disabled youngsters require and should receive unique special education services.

Special education can no longer continue to relieve regular education of its responsibility for quality education for the crippled child with minimal education handicaps.

An organized approach to continuing and comprehensive education is basic to the move toward integration of the handicapped.

To attain designated program objectives, teachers and other specialized personnel require professional preparation that is competency based.

These conclusions reflected the concerns of teacher educators, certification officials, federal, state and local education agencies, and professional organizations--approximately one hundred specialists in the education of physically disabled children and youth who met for three days in the snowy isolation of the Hotel Thayer at West Point, New York.

Among the conferees were those with extensive professional experience in teaching crippled children at home, in the hospital, in a special school or wherever else the student might be. Also included among the participants were questioning young beginners. Some challenged the long established tenets, the deep-rooted orthodoxy, and the traditional body of specialized knowledge transmitted through generally accepted models of professional training and instruction. Others felt compelled to warn against the results of dissipating efforts

and the forcing of general approaches which might foster exclusion of some disabled populations or superficiality of professional preparation.

Although somewhat contradictory and at times paradoxical, the participants' opinions, their struggles for truth, and their conclusions are presented. The report is designed to retain the integrity of the opinions expressed prior to and during the Institute.

There appears to be serious dissatisfaction with the quality and quantity of instruction; content traditionally accepted is now challenged as irrelevant for both the disabled students and their teachers. Imperatives have been avoided in this report, however, to permit divergent views and to encourage continuing discussion of issues identified, but not yet explored. Some priorities for research, experimentation, and change have been clearly delineated. Since concurrence was not sought during the Institute discussion a number of specific suggestions and questions remain either unclarified or unresolved. It would appear that for adoption by this group of educators, some proposed recommendations will require stronger conviction on the part of greater numbers or expression by more convincing spokesmen. On the other hand, more personal discipline in defining options for thought and action are needed in order to increase the reliability of some conclusions which have been specified and unquestionably accepted in the present educational system.

The meeting reflected a growing awareness of personal and professional bias, bureaucracy, inertia, and fear-based security as influential determinants of programs for the disabled. Attention was often directed to those questions which cast doubt on expressed but unassessed operational definitions as well as on organizational and instructional patterns designed for administrative convenience.

The participants focused on the stated objectives of the Special Study Institute:

To define the area of the crippled in terms of the group or subgroups of children who will be the eventual target populations;

To examine the status of professional training in the area of the crippled with relation to the nature of the children for whom personnel are prepared to work, with consideration of such factors as: curriculum (what to teach teachers), practica, and staff function;

To examine roles teachers play, the functions and the training for development of these skills;

To determine suggestions and implications which will be useful to the

Division of Training Programs and the Bureau of Education for the Handicapped in their desire to meet the training needs of the field.

The material in this publication has been derived from 1) a pre-Institute questionnaire completed by the participants (see Appendix C), 2) the conference discussions organized to highlight the problems identified and the issues inherent in the variety of the proposed solutions, 3) the general session presentations and 4) formal reports of the Institute made at the international convention of the Council for Exceptional Children held in Miami Beach, Florida, in April 1971. Editorial comments including views of the Institute staff have been held to a minimum.

Throughout, the report seems clear in noting that the traditional stress on a mental hygiene approach to the education of crippled and other health impaired populations needs further dichotomizing into the behavioral and cognitive processes for students at different levels of functioning and with various degrees of disability. In general, an eclectic meld of theory as applied to practice was thought to be within the competence of the successful teacher. This approach was seen as particularly critical in the current trend toward increased integration of the physically disabled in classrooms and activity centers for the non-disabled. The participating educators also recognized the need for the student's family and the handicapped person himself to particpate in decisions: *i.e.*, to accept, suggest, or reject alternative placements and program directions.

It is anticipated that this document will serve as a prelude to change and as the base for further study related to crippled and health imparied populations as well as the preparation of professional personnel who will assume responsibility for their education.

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CHAPTER I

Pre-Institute Expression of Opinion:

Status, Problems, and Trends

Responses to a questionnaire (see Appendix C) sent to participants prior to the Institute reflected the field's philosophical and programmatic differentiation and separation. However, these professional workers obviously constituted a community of specialists with common objectives. They perform and are committed to the performance of certain types of actions and to the extension of ideas that bring them together, yet, in ways, set them apart from other professional groups. In reporting status and conviction, they reflected most clearly their dissatisfaction with the status quo in the instruction of the physically handicapped. They expressed a strong desire to reassess the existing labels, external controls, and current educational practices.

The following discussion is based on the content of the written responses to the questionnaire. It is more than a report on the status of this field; it is an indication of an impelling desire to communicate problems of professional image in a cross-fire of cultural and societal changes. The process of completing the questionnaire prior to the physical meeting at West Point enabled the formation of a common foundation for discussion. It forced a number of the participants to come to terms with their own perceptions of the crippled and other health impaired populations, with their educational roles and the professional preparation of specialists in this field of education.

THE POPULATION

Identification of the Population

Participant responses suggested that the problems of these populations fall into four primary classes: neurological involvement, health handicaps, muscular problems and orthopedic disabilities. The resultant limitations of physical dexterity, locomotion, and vitality produce a

multiplicity of psychological and intellectual handicaps. Limited early experiences due to chronic, intermittent, or temporary medical disability may restrict opportunities for education or self support, and often result in defects of cognitive functioning. Because of frequent rejection due to an inabilitiy to keep pace with peers and to cope with the activities of daily living, this population often manifests difficulties in social adjustment and in development of a realistic self-concept. Participants generally indicated a belief that the cognitive and psychological deficits are as serious and more educationally relevant than the medical problems.

Major Educational Problems

Educational problems outlined in the questionnaire responses clustered around three core groups: problems that are psychological or emotional in nature; problems that relate to sensory, perceptual, or conceptual development; and problems that reflect the difficulties inherent in program planning.

The emotional and psychological implications of physical disability extend beyond the development of a concept of self which, as outlined by the participants, is dependent upon feedback of others. The difficulties encountered by handicapped individuals in predicting the acceptance or rejection of their disabilities by others lead to problems in social adjustment.

Frequently, difficulties secondary to the development of self-image arise. These reportedly are often related to inappropriate and/or inconsistent parental guidance, numerous separations from the family required by diverse therapeutic procedures, and the inability of physically disabled groups to keep pace with their peers. Suggested for these populations was the development of both formal and informal measures of psycho-social status and adjustment.

The problems of perceptual and conceptual development appear to be tied in with such factors as a limited physical environment and limited exposure to persons other than the immediate family or hospital staff. The problems that arise are often associated with delayed speech and language, functional mental retardation and a high incidence of learning disabilities.

In addition to specially designed curricula and instructional media, educational planning for crippled and other health impaired populations involves special administrative and program modifications. It was

emphasized that restrictions imposed by architectural barriers and difficulties related to special transportation needs contribute toward limited opportunities for school experiences. School placement has generally been made on the basis of medical homogeneity with little attention being given to the wide ranges of chronological age, mental age, academic function and level of emotional development. Consideration should be given to the diversity of special medical, social and educational serivces as well as the therapies these children require.

The child's cumulative school time was seen as a critical factor since interruptions of schooling and the intrusion of ancillary services and therapies often reduce inordinately the amount of time devoted to education. Participants' responses suggested concern about reduced parent, teacher, and child expectations for physically disabled populations and the subsequent need for more creative individual curriculum designs as well as for the development of more appropriate evaluative devices. Inadequate administrative consideration has been given to the difficulties involved in observing, recording, and reporting the children's growth and progress.

The identification of three educational problem areas (see above) was considered of less importance than the interrelationships existing among them. The implication is that crippled and other health impaired populations are confronted by many problems and that a concern with identifying a primary physical disability often restricts future educational planning. The interaction of psychological and social factors may be as critical to the learning process as is the medically defined disability. Emphasis was placed upon the need to discuss the problems of these children in both medical and educational terms. Interdisciplinary approaches appear to be most appropriate when planning services for the disabled.

Trends in Education of Crippled and Other Health Impaired

There was participant consensus that significant changes in the nature of the crippled and other health impaired populations have occurred within the past five to ten years. The children presently represented in these populations are viewed as more severely involved multiply handicapped youngsters. With advances in preventive medicine and the development of more refined methods of detection and treatment, a decrease is expected in the incidence of some disabilities now commonly seen in classes for the physically handicapped. It is also

anticipated that accompanying this decrease will be a concomitant increase in disabilities associated with metabolic disorders, congential anomalies and general social stress (e.g., battered child syndrome, air pollution, drug addiction.)

Although some changes have been noted in the education of the crippled child, the participants suggested that greater movement is anticipated in all related programming and curriculum areas. One of the most recent directions is toward greater integration of the moderately disabled youngster into the regular school program. The participants were generally of the opinion that the gradual removal of architectural barriers in physical plants and the increased cooperation between the general educator and the special teacher have interacted to influence the improvement of the procedures and criteria for class placement. When projecting into the future, the participants saw an even greater push towards more integration.

The ramifications of the changes in both the nature of the crippled and other health impaired populations and in placement procedures were seen in two interdependent areas: teacher education and school program modifications. In order to deal with the major focus of the Institute, teacher education, it is necessary first to define the disabled populations and discuss their needs in programming.

Program modifications which have taken place in the last few years reflect the rising interest in the utilization of interdisciplinary teams. These teams, playing an advisory role, would serve a dual function: 1) to diagnose specific learning abilities and disabilities; and 2) to help specify appropriate curriculum guidelines. The emphasis, then, would be on individualizing educational approaches with a cross categorical application of methods and materials. Correspondingly, secondary school vocational education programs have expanded and become more realistic for the disabled student.

Relative to the issue of future curriculum development, the question consistently arose as to whether an instructional program should be built to fit the categorical framework of crippled and other health impaired. The suggested alternative was to develop an instructional system which would be responsive to the physical conditions of the child and yet focus on individually prescribed educational objectives. The responses suggest emphasis on more flexible programming and placement in classes whose populations may have widely divergent disabilities. With the stress shifting from a medical to an educational

model, the accent would be placed on the child's ability to adapt to his environment with further consideration of specific behavioral dysfunctions which interfered with peer group integration. The expanded use of teaching machines and other programmed materials combined with an increase in prescriptive teaching techniques was viewed as a prelude to the reduction in the number, if not the eventual elimination, of the so-called traditional special classes. Itinerant specialists would be available to facilitate the integration process and to assist the classroom teacher.

Age of Admission to School Programs

It was recognized that existing programs require revision not only to accommodate a new population but also to reflect an awareness of the need for comprehensive services from the time of the child's birth. There was some diversity of opinion as to the age at which a handicapped child should be included in special education programs, but all responses on the questionnaire stipulated school entrance by the age of three years. Many of the respondents strongly urged that the trend towards early intervention should be accompanied by parent education programs. A few participants suggested that infancy programs are the joint responsibility of the medical and the educational professions. All respondents projected an increase in the number of pre-school programs for the physically handicapped.

Educational Goals

A positive educational environment as defined by the participants, is one which allows the child to achieve his maximal level of functioning in cognitive, affective, and psycho-motor skills. Educational programs accomplish the above by providing concrete experiences which promote language, perception, and social development. The basic goals of the educational experience were seen as essentially the same as for all school children.

Responses indicated little agreement as to the similarities and/or differences between an academic program for a physically handicapped child and the program developed for a non-disabled child. Many of the participants emphasized the development of daily living skills as an important and unique goal for the crippled and other health impaired populations. Other differences focused not on varying goals but rather on the alternative strategies employed by the teacher of the handicapped to achieve similar ends.

A significant proportion of the participants focused on individualization, noting the difficulty in formulating a specific set of goals for any given group of children, no matter what their diagnostic label or school placement. The responses stressed the role of the school in helping the child harmonize his goals and expectations with his potentialities. Techniques and emphasis necessarily vary from child to child.

Extent of Integration

The participants seemed almost unanimous in their opinion that some integration of handicapped children was already taking place and that even more is to be expected in the future. There was, however, no emergent pattern in regard to either the extent of integration that could be anticipated or the conditions under which it should take place. The focal point here, as in the consideration of curriculum, was flexibility. Participants stated that this question implied more than merely integration or non-integration; it concerned the degree of integration. Integration was seen as an open-ended process which could progress according to the individual child's potential and handicaps. A proportion of the respondents believed that many of the children now segregated in special programs were placed there for administrative convenience, with the placements justified on the basis of precedent. There was a feeling that all children should be given the opportunity to participate with their non-disabled peers in regular classes or at least in some common activities.

There was considerable agreement that more research was needed in this field in order to clarify the prerequisites to integration. One of the prerequisites most frequently mentioned was need for better training of general educators. Particularly noted was the regular classroom teachers' need to become more sensitive not only to the crippled and other health impaired child's specific learning problems, but also to his emotional and social needs. A positive and accepting attitude on the part of both teacher and peer group was considered an important component of successful integration. The necessity of architectural modification and the need for an increase in the number of specially trained itinerant personnel to assist both the teacher and the individual student were also mentioned as factors that would strongly influence placement of a crippled child into the mainstream of education.

The Crippled Child and Other Exceptionality Groups

Problems of crippled and other health impaired populations overlap with other disability groups and the education of this population was seen as a part of the total special education effort. The educational evaluation, diagnosis, prescription, and instructional approaches are essentially the same as for other handicapped children. To some participants, the education of the crippled seems more nebulous and complex than does that of other special education populations. It is generally agreed that physically handicapped children benefit from use of methods and materials used with other disability groups. Special attention and unique services, however, are required for the severely and multiply handicapped.

The range and severity of impairment often refers to more than the physical limitations imposed by crippling conditions per se. For example, the usual problems associated with the designated disability categories of mental retardation (trainable or educable), emotional disturbance, visual impairment, hearing handicaps and learning disabilities are often major educational barriers for the crippled and other health impaired. In addition, for these children interdisciplinary cooperation with physical therapy, occupational therapy, speech, medicine, and psychology is critical in educational planning.

For the very young at least, educational programs appear increasingly to be open to handicapped children across categorical groups. In such settings, interdisciplinary teams are available to individual children as assistance is required and without reference to diagnostic labels.

In general the education of physically handicapped children is intimately related to the education of all exceptional children. In some ways the physically handicapped have unique educational problems related to their having been pampered, isolated, and/or immobile. Their education is often interrupted due to illness, hospitalization, need for therapy, or transportation difficulties. It was hoped that future research in the fields of biology, sociology, psychology, and education will consider variables in the child's functioning which will suggest both long and short range alterations in instructional treatment.

The Crippled and All Other Children

Since many physcially handicapped individuals attend school with their non-disabled peers, all teachers should be aware of the unique

needs and modifications which will enable active participation by the handicapped. Highlighted in the responses was the conviction that special effort be made to include severely disabled children in school and community activities. While vocational aims for crippled and other health impaired children might differ from those of other children, the educational goals and processes are similar. The subject matter, depending on abilities and goals, is essentially the same. Intensification of effort may be required in developing communication, mobility skills and other functions affected by the disability. Therefore, as programs for children are developed with concern for individual differences (including levels of function, achievement, prognosis, and unique disabilities) relationships between the physically disabled population and all other children should increase.

Voluntary Agencies

The participants viewed the role(s) of voluntary agencies from different perspectives: historical, current, and future. Traditionally, voluntary agencies have been primarily involved in fund raising. Their work in the field has helped foster outside interest in and an awareness of the multi-faceted problems confronting handicapped children and adults. They have also assumed responsibility for initiating and supporting many of the services not available in the public schools. Included among such services are basic educational programs, recreation, vocational training, and sheltered workshops. They have also made counseling and other ancillary services available directly to the families of disabled individuals.

As the public education sector began assuming a larger portion of its responsibility regarding the education of crippled and other health impaired populations, the focus of the voluntary agencies has necessarily changed. While still maintaining their role as fund raisers and their equally important function in evaluating the services and needs of the physically disabled, the agencies have lobbied for legislative changes in mandated and permissive services at local, state, and national levels. They have extended their services to the school as well as the families of handicapped populations. The community agencies are still providing leadership in establishing and supporting pre-school programs.

The participants stressed the need for the agencies to involve themselves more in basic research and relinquish some of their educational responsibilities, which need to be picked up by the educational communities.

One of the most important ongoing services offered by the voluntary agencies is that of coordination. They have been facilitating communication between the family and the sources of service including the agencies, the school, and the outside community. This role needs to be continued, strengthened and enlarged.

THE TEACHER

Teacher Functions

The teacher of the physically handicapped individual was seen as having three primary roles. As an educator, he is responsible for assessing the child's capabilities, developing and delivering academic programs, and continually evaluating and revising programs. He is also the education specialist on the interdisciplinary team. In this capacity he functions with other professional and paraprofessional workers who assume an influential role in the overall planning for the child. Finally, the teacher serves as a supportive counselor to both the child and his parents. It was suggested that teachers of crippled and other health impaired children place their emphasis on their student as a learner, not as a physically handicapped youngster. With such emphases, physical, intellectual, and emotional factors should receive fuller attention with reference to the teaching/learning process.

As an educator the teacher concerns himself with three levels of operation: assessment and planning, accomodation and curriculum, and evaluation. Under assessment and planning he needs to be able to evaluate both a child's learning status and his learning style under different environmental conditions. He will then be able to discern the behavior displayed by the child while also being in a position to assess the child's specific learning abilities and disabilities.

Environmental accommodation and curriculum constitute the area primarily concerned with prescribing an educational program for each child. While serving as a team leader in curriculum planning, and organizing the curriculum so that it prepares the child for adult life and, where possible, independence, the educator also needs to establish and delineate general educational objectives. Accommodation, in the above instance, operates to structure the environment and the curriculum so as to make the classroom a place where the content to be learned is of major importance and occupies the largest block of student time. By adapting both the program and the necessary materials to stimulate the

learning process, the teacher sets up a positive student/classroom atmosphere in which the child can learn to organize his environment and relate to it. The teacher then constantly checks to see that the program maintains its continuity and that the pre-established and regularly assessed goals for each child are being met.

Evaluation is the area concerned with the effectiveness of the educational program. The educator evaluates, observes and/or measures the behavior of the learner at intervals (check points) in the educational program as well as at official terminals. If remediation is required, the teacher should be able to introduce such a program, and where necessary, to mobilize educational specialists with in-depth knowledge and skill in the areas of deficiency.

Participants listed three functions of the teacher as a member of an interdisciplinary team. As an *evaluator* he needs to contribute to the ongoing assessment of the child's growth and development by reviewing the child's progress annually, making recommendations for placement, and conducting follow-up studies of each child. Since all children will not progress at the same rate, it behooves the teacher also to review the efficacy of his total program.

As a liaison member of the team, the teacher serves as an *integrator* of the child's educational experience. In a school setting he should be responsible for coordinating the educational apsects of physical therapy, occupational therapy, speech therapy, and other services the child receives with the school program. The special educator also serves as a link between the special education and the regular education programs. He provides consultation services to new teachers and maintains close ties with the community for the purpose of locating alternative school placement, aiding the child and his parents, and gaining support for his programs. While professionally committed to education and active in professional organizations, the educator as a member of the team supports the other disciplines involved.

As a *counselor,* the teacher needs to work with both parents and students. He has responsibility for helping parents assume active roles in programming for their children, and must constantly keep in mind the need to interpret realistic goals to parents. When working with the physically disabled child, the counselor/teacher strives to encourage the student to become more independent, self-reliant, and responsible. This can be done by helping him to appraise his assets realistically and accept his limitations in both the world of the handicapped and that of the non-handicapped.

Staffing Patterns

It is anticipated that new staffing patterns and the use of educational personnel other than teachers will have significant and long-reaching effects on the nature of teacher roles and ultimately on their performance. Responses indicated a trend toward the incorporation of consultants in an interdisciplinary team approach and broader use of paraprofessionals. Means for having non-teaching roles successfully performed by consultants, thereby relieving the teacher of the need to further diffuse his talents, were recommended: 1) using social workers and/or school counselors to work with parents and handle referrals to other community agencies; 2) using educational consultants with broad knowledge of methods and materials to cope with a variety of disabilities; and 3) using technical assistants who can serve more than one school.

While work with teacher aides requires careful preparation and educational planning, it was felt that the inclusion of aides in the educational program would result in the teacher's being able to provide more individualized instruction. Paraprofessionals would be assigned to tasks that free the teacher from some non-instructional activities and would deliver the educational program prescribed and supervised by the teacher, thereby making the teacher more accessible to individual students without disrupting the general instructional program.

More precise role definition will help eliminate non-essential duplication of functions and make possible more cohesive educational programs. Effective assignment of consultants and paraprofessionals should permit each teacher to develop areas of expertise and support his role as a facilitator and resource person. As such, the teacher can act as a sounding board and provide personal guidance for other instructional personnel, in essence, to serve as a counselor and consultant to them. It was noted by participants that this trend should increase the teacher's accountability for the education of crippled and other health impaired children wherever they might be placed educationally, and should improve the quality of the program.

Teacher Competencies

The question of competencies was broadly interpreted by the respondents so as to include more than acquired knowledge and skills in cognitive and affective dimensions. In identifying competencies, the participants' prime focus was on understanding the physical, psycho-

logical, and intellectual needs of both the non-disabled and the handicapped child. The responses suggest that the participants felt that a stable concept of "average" was a pre-requisite to an understanding of "exceptional." A knowledge of the physical manifestations of crippling conditions and an awareness of the concomitant problems which interfere with the child's functioning in school are mandatory in order to provide integrated and meaningful experiences for him.

It was agreed that a common core of competencies was required for all teachers. Personality factors were not construed as unique to teachers of the physically handicapped, but rather critical in the functioning of any effective teacher. The stress was placed on empathy, warmth, and concern with the establishment of sound interpersonal relationships. The participants agreed that rapport with both parents and children was fostered by the teacher's ability to empathize and to identify with the students, and with the development of an awareness and acceptance of the child's individual limitations and specific capacities. Creativity and the ability to motivate students as well as foresightedness, objectivity, and flexibility were also viewed as necessary teaching tools for creating and nurturing a low anxiety level, affective learning environment.

Superimposed upon affective characteristics and competencies for general educators are specific skills felt to be needed by teachers of crippled children. Divided into broad areas, these competencies include:

Basic areas of knowledge

- understanding the dynamics of child development; the nature and developmental stages of the cognitive process
- understanding the nature of disabilities and how they interfere with learning
- awareness of the neurophysiological correlates of physical disability
- knowledge of the psychological implications of handicapping conditions
- ability to adapt both physical environment and equipment for use by the handicapped

Assessment and programming

- ability to develop and modify tools for assessing the child's learning style and level of achievement
- ability to plan and modify curriculum according to individual differences

- knowledge of and ability to use specialized equipment and media
- ability to teach subject matter

Coordination of resources

- awareness of special resources that exist in the community
- ability to serve as an effective team member
- ability to integrate ancillary services and to promote interagency cooperation
- knowledge of work-study programs.

The area of teacher competencies was further codified to delineate those skills needed by teachers at four different levels of a child's development: pre-school, elementary, secondary, and post-high school. Again, there appeared to be both an affective and cognitive core of teacher competencies mandatory for all teachers, but the specific emphases appeared to shift with each level. The affective domain seemed particularly important for the pre-school teacher who offers the crippled and other health impaired child one of his first social experiences outside the home or hospital. The participants felt that elementary school teachers required a strong background in physical growth and development as well as perceptual and language development. Stressed for secondary teachers were skills required to plan and transmit specific academic content and skills necessary to give appropriate guidance to the youngsters. The dual focus for teachers working with post-high school students was on counseling and vocational considerations.

PROFESSIONAL PREPARATION: THE TEACHER

Trends in Teacher Preparation

Descriptions of pre-service programs show continuing emphasis upon early involvement of prospective teachers in the educational milieu as well as in the community. There is continued growth of interest in early childhood education and involvement of teachers in the habilitation of the young physically handicapped child. Emphasis upon seeing the child as a total individual with characteristics other than physical handicaps, and emphasis upon classroom medical management rather than medical aspects of debilitating conditions have both contributed to changes in teacher preparation. Continued movement toward

integration with non-disabled peers implies the preparation of resource and crisis teachers.

The participants felt that acceptance of the concept that crippled and health impaired children are multi-handicapped and a multi-disciplinary approach to total planning necessitates a more general, non-categorical base upon which specialized training may be built. It was suggested that competencies common to several areas of disability in special education be identified and taught as a core curriculum. Suggestions were made that course work and clinical experience be integrated, with concentration upon the following:

- early childhood development
- techniques of training visual and auditory perception
- reinforcement theory–behavior modification
- language development and communication skills
- knowledge and use of equipment aids
- use of educational media (hard and soft ware) and new materials as well as their applicability to curriculum development
- knowledge and use of instructional techniques employed in other fields of special education (e.g., mental retardation, learning disabilities)
- knowledge and use of community resources
- techniques for establishing recreation and physical education programs for the crippled and other health impaired.

The implementation of individual programming has focused attention upon the development of skills for what is commonly called prescriptive teaching. Emphasis upon competency in educational diagnosis specifically requires:

- scientific study of the learning process and an awareness of different motilities for learning
- direct teaching techniques based upon task analysis
- emphasis upon competency-based instruction and performance-based evaluation of specific skills, strategies, and management techniques
- use of psycho-educational strategies rather than "watered-down" regular curriculum models.

There appears to be a growing trend toward model centers and university-affiliated schools. Such programs provide for experience in a

variety of settings for crippled children and youth. Courses may be given in the school setting by a "clinical professor" stationed in the school.

Participants indicated a growing trend in school sponsored in-service programs which include:

- orientation for new teachers
- understanding of community resources
- use of video taping and self-evaluation techniques
- post-graduation college supervision of teachers in the field.

In summary, the trend appears to be toward the establishment of broadly based preparation upon which to build specialization in the education of crippled and other health impaired. Expansion away from the self-contained classroom has resulted in thoughts of a resource model allowing the teacher of the crippled to be productive in situations other than the self-contained classroom. Knowledge and exposure to the crippled and other health impaired in a variety of settings and levels, and concurrent participation in coursework focuses upon a situation where trainees internalize concepts that change their behavior.

Clear in the responses was the participants' growing concern about the quality of teaching: an awareness that teacher preparation institutions should "not be afraid to fail the failures."

Problems Related to Practicum

The most frequently mentioned problems in student practicum revolved around the limited experiences available. The college practicum usually exposes the student to too few children with too small a range of educational problems. It was also noted that prospective teachers were exposed to few types of the educational settings in which they might be employed. Concurrent with the above mentioned limitations was the expressed opinion that colleges and universities seem impervious to the need to change their programs. In general, there appears to be a lack of college supervisory personnel with classroom experience. The present quality of student teaching supervision was also questioned. Excessive travel time and distance between the practicum situation and the college setting limits supervisory contacts and impedes the college supervisor's assistance to teacher-in-training in actual use of methods and materials.

In general, the respondents reported a lack of coordination between the formal course work and the practicum experience. Those responsible for teaching the formal courses have little opportunity to see the teacher in action and seldom see crippled and other heatlh impaired children. Practitioners felt that the students' knowledge was often too "bookish" with little reference to the reality of teaching. The lack of time spent by cooperating teachers and university supervisors in planning for a comprehensive pre-service relationship was considered a major barrier to the improvement of teacher preparation. Other deterrents to optimum practicum experiences rest with the cooperating teachers. Among the problems identified were 1) student disillusionment about the quality of observed teaching; 2) unwillingness of ccooperating teachers to relinquish classroom control to teacher trainees; 3) lack of willingness of some outstanding classroom teachers to serve as cooperating teachers; 4) hesitancy of cooperating teachers to have a student serve as classroom observer or evaluator; 5) unwillingness or inability of the master teacher to clarify the objectives for his classroom charge; and 6) negative reactions of older and experienced teachers to prospective teachers' enthusiasm and desire to try new ideas.

The limited nature and scope of the practicum experience was questioned by the participants. The settings for practicum experiences seldom include home instruction. Too few opportunities exist for student teaching in local public schools. The college laboratory school was seen as obsolete, *i.e.*, too limited in scope and unrealistic in comparison with the programs serving community children. On the other hand, too few public schools appear to be experimenting with new educational directions and approaches. Student teachers seldom have the opportunity to start the school year with the teacher. Participating in setting the stage (the classroom) for direction and discipline was reported as essential for the teacher-in-training since it will mark his initiation as a first year professional in the field.

Many respondents suggested an increased amount of student experience with non-disabled children as well as actual work with members of a variety of professions concerned with the child's development. Too many beginning teachers are subject to poor transition periods, if any, from theory to practice with a minimal amount of actual experience and/or exposure to the range of services required for crippled and other health impaired populations. Among

those experiences suggested would be involvement in work-study or vocational programs so essential for many of these handicapped young adults.

Trends in Student Practicum

Innovative practices referred to included: 1) provision by the college or university for more intensified supervision of students in the field; 2) the development of an integrated sequence of practicum experiences in a wide range of settings with a variety of children to be encountered in special education; and 3) the use of immediate feedback of students' performance for cooperative assessment and discussion.

Most universal was the reported need for a sequence of early and increasing numbers of experiences which are well planned and supervised. It was suggested that actual participation in systematically planned programs with crippled children and adults be encouraged for interested high school and college age youth, directed toward a gradual increase of knowledge and responsibility in the field. It was also suggested that students assumed greater voice in the determination of the locations in which they will do field experience and that these be more consistent with their anticipated employment plans.

Again, the recognition of multiple disabilities and the inadequacy of narrow "categorically limited" preparation was emphasized. Repeated reference was made to the importance of preparation and field experience with non-disabled children as well as with children showing retarded mental development, severe emotional problems, and sensory impairments. As prospective teachers gain knowledge and skill in observational techniques, educational assessment, specific educational planning, and program modification; supervised practicum experiences seem imperative to assure increased teacher effectiveness.

Suggested directions for practicum included a tightening and strengthening of the relationship between theory and practice. College personnel were urged not to function as practicum supervisors without classroom experience, the ability to demonstrate instructional techniques, and the ability to interpret and criticize the teaching-learning processes as they occur. It is the university's responsibility to provide or select practicum settings that assure the kind and quality of field experience deemed essential to the students' preparation. It also appeared necessary to empahsize the critical need for both extended practicum experience with specific children and regularly scheduled (weekly) practicum seminars with college personnel.

Demand for quality control of practicum experiences was reflected in recommendations for specific training of master teachers for designated teacher education roles. These in-service teachers would receive college appointments and remuneration in recognition of their unique instructional contributions. The resultant increased communication and shared responsibility was seen as a step toward bringing the school and community into pre-service training programs.

Increased cooperation in on-going programs for children was recommended in the form of 1) a fifth year paid internship with college supervision, 2) student service as teacher aides, and 3) assumption of responsibility for educational diagnosis including short term instruction for a child or a group of children.

Additional emphasis was placed on training teachers to join interdisciplinary teams. Practicum improvement in this area was seen in the use of medical, psychological, and social records and in pre-service participation in joint planning, programming, and goal setting (both long and short term). Specifically recommended were observation and participation in non-classroom activities (e.g., day care, recreation, camping, vocational training, sheltered workshop and therapy activities).

Participants urged that certification standards include practicum with a full range of children in a variety of educational settings. Special importance was given to pre-school and secondary-school aged physically disabled populations.

Goals for Improving Teacher Education

The latest government report on the need for teachers of crippled children was reflected in the responses of the participants.* As people in the field begin to view the changing role of special education so too must the teacher educators review their efforts in the training of professional personnel.

The particpants stressed that federal funds are needed to allow for expansion of existing programs, for the development of new programs where necessary, and for the awarding of scholarships and other study incentives. While in general encouraging the non-certified teacher to

*Herman Saettler, *Students in Training Programs in the Education of Handicapped Children and Youth 1968069.* Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education, and Welfare, July 1970.

finish his academic degree, several participants questioned the relationship between degree content and existing certification requirements.

If universities departed from traditional curriculum procedures and merged research and professional preparation with classroom teaching perhaps more viable programs, more sensitive to needs, would emerge. If teacher competencies were known and then coupled with an analysis of performance criteria, regional workshops for college professors focusing on the improvement of teacher preparation might be instituted as a means of improving existing professional training programs.

To enhance the quality of courses offered, several participants expressed the hope that eventually colleges and universities would be given responsibility for recommending candidates for certification. This responsibility would give the schools the opportunity to exercise more control over the quality and quantity of teacher education courses for individual students. Suggested models for teacher education placed emphasis on two areas: 1) clinical teaching experience in an interdisciplinary setting and 2) background emphasis on early childhood teaching and theory. One participant mentioned that a way for colleges "to concentrate on innovative exciting programs for teachers of COHI children would be to withdraw all programs specifically designed for crippled and other health impaired."

A reshuffling of courses to follow new models of teaching based on different criteria for measuring the "finished teacher-in-training" was proposed. A suggested program based upon a three track teacher preparation model follows:

Type I

Teach competencies for instructing all handicapped children who are regular class potentials. This represents a two-year program with concentration in regular education and each area of special education.

Type II

Teach competencies for instruction by category or in mixed groups of children needing intensive special services but for whom the goals include academic performance. This suggests a one-year program with some regular education but with emphasis upon teaching children who are severely disabled physically and/or function as if they were retarded in learning and/or have sensory deficiencies.

Type III

Teach competencies for instruction of those children for whom skills in self-help and social behavior take priority. This might be a two-year

junior college program specializing in crippled and other health impaired with a focus on teaching the severely retarded.

In designing a new program to prepare teachers to work with crippled and other health impaired populations many participants suggested that the "birth to grave" concept be taught. That concept, coupled with a knowledge of techniques of parent counseling and an intensive background in the medical problems of the school population would allow the teacher to feel more comfortable when dealing with both students and other professionals.

Whether teachers are prepared as resource personnel or for classroom situations their backgrounds should include training for program flexibility and evaluation. One way to foster a more positive relationship between the student and the university staff during the time of practicum is through the use and encouragement of the clinical professor concept. While instructing future teachers on methods and giving them more positive reactions to and evaluations of their experience, the clinical professor can demonstrate techniques and skills needed by the teacher of the physically handicapped. The clinical professor could demonstrate innovative techniques, show how both the community and work experiences would serve as part of the instructional process, and also give concrete examples of how to maximize use of time with children.

In a laboratory setting or classroom as well as in public facilities the special education teacher-in-training should be exposed to a gamut of disabilities. Understanding the sociological, physiological, biological, and educational approaches to children becomes a more educationally relevant experience when the children are an integral part of the program. The in-service training program should also include exposure to the crippled and other health impaired populations in various settings, *e.g.*, institutions, pre-school centers, regular or special classes, post high school programs, homebound and hospital settings. Practice in both tutorial and group instruction should also be included.

That universities and colleges should assume increased responsibility for certification was referred to previously. What needs to be mentioned at this time following a description of different program possibilities is that many of the participants who responded to this question were in favor of building a series of competency levels into the training program. Several participants felt the need to identify criterion objectives based on competencies--not only those competencies as

exemplified by classroom management techniques but also competencies directly related to subject matter and grade level material for those who will work with older crippled children and young adults.

To insure that the student teacher receives the theoretical and practical experiences necessary for achieving a sound background in the area of crippled and other health impaired, several participants expressed the hope that certification would eventually require full-time residency within an institution of higher learning. In-service education for the purpose of accumulating academic credit or points was frowned upon because it does not allow for the continued in-depth study necessary to obtain the competencies required of an effective teacher of the physically handicapped.

It was urged that study be made of the ongoing process of teacher education with an eye toward changing existing programs that are not producing the expected results. If specialists in this area are to have instructional skills and develop avenues of resources outside the realm of the regular classroom teacher then continuing evaluation of their programs is necessary. Teachers of the physically disabled need preparation to assume their many roles within educational agencies. They might be required to work with administration staffs as well as university and medical personnel. The respondents felt strongly that teachers must be prepared to review the child population in terms of educational status and needs before helping to set up programs. The teacher should be prepared to plan curricula and engineer successful learning situations. He will have to foster positive relations within the educational agency so as to allow for integration of crippled and other health impaired children and young adults when possible. The professional special education personnel need to be ready to take a more positive stand concerning the educability of crippled children. Personnel in continuing education should understand and respond effectively to the changing needs of the crippled and other health impaired populations. Perhaps in some way certification renewal could be tied in with continued education.

Need for Teachers

Responses to the question about supply/demand ratio of teachers of crippled and other health impaired seemed dependent on two factors: geographic region and definition of population served. There appears to be more demand for these teachers in rural or suburban areas than in

urban areas. It was pointed out that too many teachers now in classrooms for crippled and other health impaired have been transferred from other school assignments with no special education preparation or certification. This situation is worthy of study.

The introduction, in many states, of a learning disability specialist or a special resource teacher resulted in another set of variables that influence the demand/supply ratio. In many cases this specialist has freed teachers of the physcially handicapped to work with more severely impaired children, as those less impaired enter the mainstream of education. There are reports, though, that personnel trained to work with children who are crippled or otherwise health impaired have moved to fill the newly created positions and have left vacancies in their own special fields.

As funding patterns have changed with consequent reduction in teaching personnel and as the monies for the establishment of new and experimental projects have been withdrawn, an oversupply of teachers in some communities has been reported. The inequitable distribution of personnel was noted by a number of respondents.

Recruitment

It was generally agreed by participants that one of the most useful ways to recruit candidates was to promote awareness of opportunities in the field of service to crippled and other health impaired through dissemination of information about special education in terms of 1) its function, 2) opportunities to work with other professionals, and 3) job opportunities. Suggested channels of dissemination included the Council for Exceptional Children, Future Teachers of America, and community youth groups. It was also suggested that the field enhance its image by promoting a positive teacher model. Stress needs to be placed on high professional status, creative aspects of the position and inherent rewards. Several participants suggested that more teacher benefits and higher salaries be given to educators of the physically handicapped.

To promote contact between potential teachers and the handicapped populations, it was recommended that voluntary work experiences with young disabled children be made available to junior high school students. Most participants were in favor of involving high school students in educational and recreational programs for crippled and other health impaired children.

Most participants agreed that federal fellowships and traineeships should be offered only to carefully selected candidates. Screening of potential candidates should begin as early as possible and be based upon variables central to outstanding teaching. It was suggested that certain performances with these children be demonstrated before admittance to teacher preparation programs and that the personality of the trainee be suited to the work for which he is being prepared.

It was further suggested that outstanding teachers of the non-handicapped be recruited. Once identified, this successful practicing body should be reinforced with coursework at their competency levels with a sequence of courses accompanied by criterion-referent evaluation.

Is Specialized Preparation Required?

It was generally agreed that the teacher of crippled children and youth should be readily aware of the physical difficulties of his students and the concomitant educationally handicapping conditions. He should be prepared to provide continuous counseling to insure adequate psycho-social adjustment in the variety of situations the student will face in and out of school. Repeated reference was made to familiarity with medical management, skill in analyzing the behavior of the child with unique and multiple problems, understanding of parental needs and ability to work through community resources.

Specialized preparation was seen as essential for teaching the multiply and severely handicapped. The additional training aspects related to intensive study and use of both informal and formal evaluation techniques combined with a variety of educational interventions. For teachers who work with those unable to cope with usual daily living demands, the respondents felt that special education preparation was in addition to, and often different from, that provided for the regular classroom teachers. Reference was made to the factors of the child's environment and the need for corresponding adjustive techniques and programming.

The recommendation was for the individualization of professional preparation. Such programming requires systematic experimentation and use of prescriptive and creative approaches in flexible learning situations. Emphasis was placed on highly supervised practical experience with crippled and other health impaired children. As general teacher preparation includes stronger emphasis on contingency manage-

ment, behavioral and psychological approaches and methods, there probably will be less need for unique professional preparation to instruct the majority of individuals who are crippled or otherwise health impaired.

While the responses appeared to focus on a core curriculum of preparation for teaching handicapped children, the participants felt that the freedom to modify present training programs was critical. With some emphasis placed upon highly specialized and unique competencies, the majority's response called for teacher preparation based upon individualized educational assessment of the populations and the implications of that assessment for immediate and long term program planning.

Even though a modified and greatly improved general special education base was agreed upon as optimum for the preparation of teachers of the crippled and other health impaired, the need for specialized supervision and in-service education was frequently mentioned. Attention was directed toward the personal characteristics of the teacher; his skill in problem solving and flexible educational management as well as his knowledge and mastery of the available instructional techniques. The need for determining and employing the most appropriate educational intervention in the most effective way at the time of the child's greatest receptivity was implicit in almost all responses regarding all teachers whether they be generalists in regular or special education or reassigned teachers of children classified as learning disabled or mentally retarded.

Caution, however, was expressed by participants who felt that little evidence exists relating to the efficiency or efficacy of employing generalists to work with the wide range of disabilities existing in crippled and other health impaired populations. Questions were raised about the advisability of minimizing the need for continued specialized preparation and program modification enabling special education generalists to work in this area of specialization.

PROFESSIONAL PREPARATION: LEADERSHIP PERSONNEL

Competencies of College Teachers

Participants saw the role of the college instructor as one of assuring that students in teacher preparation programs are able to interpret the

problems of the crippled or otherwise health impaired individual and effect a suitable educational experience for him. The college instructor needs to provide an environment in which students can internalize positive attitudes, sensitivity, and awareness to the needs of the populations. The ability to integrate theory and practice requires an understanding of the needs of both the handicapped child and of his teacher. The college teacher must be able to share knowledge, attitudes, enthusiasm, and problems as well as have an openness and adaptability to new instructional approaches and techniques. Respondents asked that the college teacher possess a wide background of experiences including at least five years of classroom instruction and several years in administration. For college teaching the prerequisites fell into two spheres: education of the handicapped child and education of prospective personnel in the field.

The most frequently stated requirements related to meeting the needs of crippled and health impaired populations included:

- knowledge of normal intellectual, social and cultural growth and development
- special preparation and work in child pathology and psychological aspects of physical disabilities
- preparation in other disability areas combined with experience in working with a wide variety of children's problems
- experience and expertise in assessment of learning style and level of achievement
- knowledge and skill in curriculum development and behavior modification
- knowledge of methods and materials used in the education of crippled and other health impaired children
- knowledge and skill in parent counseling and in vocational preparation.

In addition, in order to meet the needs of college students, teacher preparation personnel require:

- ability to design and carry out a competency-based curriculum through individually designed learning programs
- familiarity with community agencies, programs, practices, and personnel in order that programs can be planned utilizing outside

resources for course enrichment and practicum experience

- ability to conduct and apply program development skills
- ability to demonstrate techniques to be used with crippled and other health impaired children.

Through their involvement with research at the university level, and their associations with a variety of specialists, college teachers are, it was assumed, in a continuous process of upgrading their knowledge of all facets of special education and related areas. Through continued classroom involvement with crippled and other health impaired children, teachers and students in the field should provide insight into unusual problems and help college personnel to evaluate course offerings for prospective teachers.

In general, university professors working with doctoral students were expected to be experienced special educators with particular reference to the following factors:

- experience with education of crippled and other health impaired populations in a variety of settings and in various capacities (*i.e.*, teaching, assessment, supervision, administration)
- knowledge of psycho-social and psycho-educational theory and ability to relate practicum and theory
- knowledge of approaches to behavioral change and their relation to curriculum development
- knowledge of special programming needs of this population as well as trends in special education, general education, and allied fields as they relate to these needs
- involvement in and knowledge of the community and the ability to coordinate the university program with programs of outside agencies
- understanding of educational policies and practices from local, state and federal standpoints
- ability to evaluate the student critically and constructively through his courses of study, internship experiences, and dissertation
- openness to new ideas and an air of experimentation, ability to stimulate students to seek new solutions to special education problems
- interest in upgrading the profession and the ability to contribute to knowledge and practice in the field
- knowledge of and active participation in research in education and related areas
- ability and willingness to individualize the doctoral program on the basis of the candidate's previous experiences, job expectations, and personality (inductive teaching ability).

Competencies of Supervisory Personnel

The supervisor of programs for crippled and other health impaired was expected to integrate facets of school, community, and home environments into useful educational programs. Participants described the supervisor as a person with enthusiasm and personal integrity, with ability to listen to and get along with people, and with knowledge of the importance of timing. He must envision program objectives, pupil needs, and requirements for program change. Supervisory functions fell into two main categories: matters affecting curricular and instructional change and duties concerning the maintenance of staff relationships. To affect and improve curriculum the following qualities were highlighted:

- knowledge of current research and the ability to conduct action research
- knowledge of instructional media and strategies
- ability to demonstrate expertise in assessment of children and to demonstrate appropriate educational intervention
- ability to evaluate the effectiveness of instruction
- openness and adaptability to new approaches and techniques

Competencies identified as most critical in maintaining effective staff relationships were the following:

- ability to recruit high calibre, senstive people
- ability to give direction and render evaluations in consultant rather than dictatorial approaches
- ability to sense staff strengths and needs and to remediate deficiencies through the organization of workshops and in-service programs of staff development
- ability to support and/or improve the effectiveness of the teacher who is trying new methods of reaching children with crippling impairments
- ability to work with administrators
- ability to create and coordinate advisory groups and to delegate authority when necessary.

The supervisor is most often looked upon as a master teacher with knowledge of the implications of how handicapping conditions affect learning. Since the supervisor often acts as liaison between the regular and special classroom, it was urged that he have a wide background of experience with non-disabled children. It was felt, however, that the supervisor of programs for crippled and other health impaired popula-

tions should have training in supervision and should not be appointed on the basis of teaching experience alone.

Competencies of Administrative Personnel

The participants agreed that the administrator of a facility or a program for crippled children and youth requires both managerial skills and knowledge of administrative theory in order to make program decisions based upon rational goals, objectives, and priorities. Experience with these special populations in several types of settings as well as knowledge of administrative procedure were suggested as necessary training components for the future special education administrator. With an understanding of the nature of handicapping conditions, the administrator needs to be prepared to make necessary program modifications. There was disagreement as to whether a doctoral degree was necessary.

The competencies mentioned seem to cluster into four primary groups: competencies required for improving curriculum and instruction; competencies required for school personnel administration; competencies required for administration of school facilities, services and materials; and competencies required for interacting with educational and social systems. In each area the ability to implement a plan of action was deemed imperative.

To improve curriculum and instruction the most noted competencies included:

- appreciation of experimentation and receptibility to new approaches
- knowledge of the process of planned change and skill in initiating new programs
- knowledge of curriculum development theory and ability to develop and implement educational objectives
- knoweldge of a variety of on-going programs in other communities
- skills in program evaluation and ability to identify gaps in programming
- knowledge and skill in use of supervisory strategies and techniques.

Requirements for school personnel administration appeared to be:

- ability to exhibit personal concern for individuals
- ability to meet the many communication demands
- skill in group dynamics

- ability to prepare job descriptions
- ability to screen and select appropriate school personnel
- ability to deploy staff appropriately
- artfulness in rendering evaluations in non-punitive terms
- skill in organizing in-service programs
- ability to encourage staff to keep abreast of the field through professional reading, attendance at conferences, and use of other information-sharing media
- ability to coordinate activities and contributions of ancillary personnel and/or representatives from allied disciplines.

Considered essential for administration of school facilities, services and materials are the following:

- knowledge of instructional technology, textbooks, and materials
- awareness of architectural considerations necessary in facilities for crippled and other health impaired populations
- awareness of special equipment needs for these individuals
- awareness of special transportation arrangements
- ability to acquire and disburse funds for programming
- ability to work with fund raising groups
- experience with authorized government sponsored projects
- skill in grantsmanship.

Competencies for interacting with educational and social systems included:

- understanding the structure and dynamics of systems theory
- ability to relate classroom and school setting to home environment
- knowledge of, and ability to work with, community resources
- understanding the forces of change in a community coupled with the ability to handle constructively those forces in the best interest of the children and the program
- ability to work successfully with policy making groups in the community
- knowledge of federal, state, and local laws and regulations affecting the education of handicapped children
- commitment to the inclusion of crippled and other health impaired in regular education programs
- ability to communicate the demands of a special program to those with non-special educational orientations.

Competencies of Research Personnel

Basic knowledge of the use of research design and statistical techniques including a thorough understanding of the possibilities and limitations of research were designated as the primary prerequisites for research personnel.

There was much concern expressed about both selecting research projects which are relevant to problems faced by teachers in the classroom and about the interpretation of research findings in the educational programming for crippled and other health impaired populations. Research in this area of special education requires a high degree of creativity and the ability to apply specific knowledge relating to handicapping conditions through stating and testing hypotheses which if supported will improve the instruction and learning of these children and youths.

In order that research findings be applicable to educational programming, it was suggested that the researcher have the following qualities:

- awareness of past research in this area of special education and of research in other fields applicable to the education of these populations
- knowledge of the behavior of crippled and other health impaired children and the relationship of such behavior to their educational needs
- expertise in subject matter and knowledge of curriculum development
- concern with an analysis of learning rather than with IQ
- ability to adapt and modify test materials
- recognition of the extreme variables that apply to these special education populations
- awareness of intra- and inter-group differences in the children under study
- realization of school setting variables and the practical work load of a teaching staff.

The participants felt that the researcher should be able to communicate adequately with practitioners in the field. He has a responsibility to disseminate and share new information, provide consultative support, and offer practical solutions to problems. To conduct applied research in the classroom or other educational setting, the researcher

should be able to instruct and assist teachers in the collection of data relevant to crippled and other health impaired populations. It was felt by participants that positive relationships of researchers with people in the field foster support of, and belief in, the benefits of research.

Preparation of Leadership Personnel

Programs preparing students for leadership positions are expected not only to offer a theoretical or conceptual framework but also to provide opportunities for practical involvement. The participants suggested that universities develop competency based core curricula oriented toward individualized learning.

Participants were undecided as to whether it is preferable to recruit personnel from the ranks of experienced and successful special education teachers or from the leadership ranks of allied fields. While programs for leadership tend to de-emphasize categories of exceptionality, it was suggested that candidates selected from this latter group have experience with crippled children and their educational programs as part of professional preparation.

The internship program was considered the most promising practice in training leadership personnel. Continued field experiences in institutions, agencies, clinics, and schools were seen as providing:

- opportunity for exposure to other professional fields; use of team approach, multi-disciplinary work relationships, cooperative research efforts
- practical involvement in programming, assessment and evaluation, and research
- opportunity to set priorities in specific program areas.

The use of simulation techniques was suggested as a supplement to actual practicum. Also, workshops focusing upon current practices and and problems in the education of these special education populations were seen as productive since they bring together supervisory, administrative, and college personnel.

Participants did not agree upon the placement of emphasis in training leadership personnel. Some indicated that improvements should ideally be related to present and emergent practices rather than to theoretical constructs. Others felt that focus should be directed toward the exploration and development of theoretical positions. Participants expressed the feeling that present leadership personnel are

not well acquainted with the needs and problems of crippled children in schools or with the reality of classroom situations. This concern may be due in part to a noticeable absence of idea sharing and/or confrontation among the classroom teacher, college personnel, administrators, supervisors, and the recipients of services (either the student or his parents). Interdisciplinary workshop sessions were recommended to assist in the development of ideas that could be applied in preparation programs.

Acknowledgement by leadership personnel that crippled and other health impaired children have a right to full educational opportunities, regardless of whether it is through regular or special education, has led to broadening of the base of this specialization area. Consequently, preparation programs need to orient leadership personnel toward ways in which special education can be integrated into the general school program. Needed also are improvements in preparation programs for leadership in the field which should be directed toward a broadened base of competencies in three main areas: coursework, practicum, and personnel interaction in the community.

Needed improvements in coursework identified by participants were:

- teaching of specific administrative skills including a systems approach
- instruction by successful special education administrators currently working in the field
- techniques of evaluation relevant to curriculum, teaching style, methods, and materials
- knowledge of technology and use of educational media
- emphasis on teaching techniques for use with children with learning disabilities
- research orientation; techniques of in-service research
- development of competencies in professional writing
- use of "think-tank" seminars.

It was felt that practica could be improved through:

- better coordination and supervision of internship experiences
- earlier and more meaningful experiences with crippled and other health impaired populations
- several in-depth experiences in different types of programs
- actual administration experiences in addition to field observation and assistance.

The needed improvements in community and personal interaction identified in responses to the pre-Institute questionnaire included:

- encouraging more active political involvement with emphasis on maintaining contact with local, state, and federal agencies
- developing ability to cope with forces in the community
- emphasizing better public relations and means of dissemination
- developing expertise in working with general education
- relating effectively to parents, teachers, and students.

Trends in Doctoral Study

The participants suggested that doctoral study be re-evaluated in terms of courses and other requirements leading to the degree. The dissertation was questioned and several suggestions were made for alternative types of projects that might be more relevant to the student, the field, and to the crippled and other health impaired populations.

Recognition of a multi-disciplinary approach to the problems of these populations should be followed by an interdisciplinary study program. Doctoral study should, therefore, allow a student to mix disciplines and integrate content from a variety of fields relevant to the problems encountered by the crippled and other health impaired. Of particular importance is the need to emphasize studies relating to technology and technological research. Study in the areas of general medicine, pediatrics, genetics, and child development was suggested by the participants. The acquisition not merely of factual content but of skills involving information systems and integration of basic philosophies was recommended.

Hopefully, by following a consoritum approach to course work with emphasis on fields related to the affective domain of the crippled and other health impaired, there will be a tendency to do away with awarding advanced degrees on the basis of a narrow disability category. To some participants, the language requirement seemed unnecessary in the preparation of leadership personnel. In general, it was felt that by introducing more freedom for student involvement in special projects and programs, closer, more binding, and mutually beneficial ties might be fostered between students and university staff.

Strongly recommended was the encouragement of student involvement in all types of research. While several repondents stressed the value of student participation in research of a theoretical nature rather

than limiting concentration to study that is essentially practical, others felt that graduate students needed more opportunities to do meaningful action research. Areas included in this type of applied research were program evaluation, behavioral techniques, application of learning theory, curriculum development, and remediation of learning deficits.

Many participants voiced the hope that work at the doctoral level would be designed to give a student the chance to explore the areas of research, teacher education, or administration before final career selection. Mentioned also was the need for more student exposure to on-going federally supported research and demonstration projects and grant proposal writing through internships at the federal, state, and university levels. Direct application, perhaps in conjunction with in-service work in the public schools, would allow a student exposure to the field and to the grass-roots effects of both the state and federal governments' programs.

The participants seemed to agree that direct involvement of doctoral students at the university, in the local community, and with crippled and other health impaired individuals is an essential ingredient in preparation for leadership roles in this area of special education. Doctoral students should also interact with stimulating and creative in-service teachers of the physically handicapped. Graduate internships and teaching positions might then better assist prospective college instructors in preparing to train alert and effective teachers.

A large number of participants were interested in the development of more accurate and valid instruments for the educational assessment of crippled and other health impaired populations. This emphasis is seen as a step in turning research attention to the nature of the learning process as well as to new teaching approaches and curriculum.

It was suggested also that research into the nature of the learning process be focused on possible deviations in the cognitive development of crippled children and on causes of learning disabilities exhibited by these populations. Suggestions for research included the study of 1) the relationship between perception and the integration of information from the environment; 2) the relationship between general language functioning and skills in reading; 3) the effects of systematic use of reinforcement theory; and 4) the effects of direct teaching and incidental learning of academic, language, and thinking skills.

It was also recommended that research efforts be focused on the development of remedial procedures relevant to the behavioral patterns

exhibited by crippled and other health impaired individuals. This work should be accompanied by research designed to evaluate the use of specific intervention techniques for specific learning problems and how learning is affected by given materials. Experimentation with techniques of stimulus input, behavioral management, and modes of expression was suggested. Focus would then be placed on securing information that would maximize the educational and vocational potential of severely impaired persons.

A number of questions related to personal and social adjustment were raised by the participants. They desire that research attention be given to the relationship of the curriculum to economic independence and job opportunities with special reference to the degree of handicap and the definitions of success for individual adults. They also see a need to study the roles played by self-assessment in personal and social adjustment, in measuring the threshold of tolerance for personal challenge. What relationship, if any, for example, exists between the curriculum, social acceptance, social competencies, recreational needs, and constructive use of leisure time. Also mentioned in the area of social development was an investigation of ways to change the negative attitude of professionals toward the handicapped.

Research needs in the area of teacher education centered upon:

- exploration of specific competencies needed by teachers of crippled and other health impaired children
- development of new and different recruitment approaches as well as techniques for selecting and training teachers
- attention to the effectiveness of off-campus aspects of teacher education
- development of in-service training packages
- comparisons of the effectiveness of different teacher models.

Suggestions for research in the organization and administration of programs for crippled and other health impaired children included studies of:

- the efficacy of administrative organizations
- the utilization of differential staffing patterns
- the use of contingency contracting
- the problems of effective teamwork
- the efficacy of both upward and downward age extension of services
- the development of effective education programs for rural areas.

Many participants recommended longitudinal studies of the development of children who have been placed in special programs or who are receiving special services and treatment. They asked also to what extent academic achievement was related to early childhood programs for crippled and other health impaired and high risk children.

The need for more interdisciplinary action and planning in relation to research was recommended. Suggested as related topics for research were:

- studying the effectiveness of mechanical and electronic aids in the learning process
- devising communication response systems for the severely handicapped
- investigating the long term effects of drug use and misuse for treating the brain damaged child
- examining the function of physical-sociological systems in the acquisition of knowledge, skills, and integration.

Participants recommended that some research attention should be devoted to surveys in the field. Suggested topics included:

- adequacy and appropriateness of funding
- present and future services needed by multiply handicapped populations
- estimated number of crippled and other health impaired individuals needing services and the number receiving services
- regional needs for programs and teachers
- follow-up of teachers prepared to instruct these populations
- job opportunities available to these handicapped individuals.

Lastly, participants suggested that research be done on how to implement and coordinate existing research findings.

CHAPTER II

The Nature of the Areas of Specialization:

Prepared Papers

While the body of knowledge related to the education of handicapped children mounts and conceptual and methodological changes in special education are taking place, little effort has been made to redefine the present area of the crippled or to identify future directions and developments in this field. Few changes appear to have occurred in this field despite the intellectual, social, and political revolutions taking place in society. In their particular and peculiar contemporary forms, scientific discovery and technological development, the transformation of education toward individualized and systematic instruction, and the reorganization of new kinds of moral pre-occupations have not as yet deeply influenced the outlook of those engaged in teaching crippled children or those preparing professional educators in this field.

The concerns of some experienced specialists were expressed in statements prepared for the Institute. Dr. Wyatt's analogy of educational programming for the crippled with Marley's ghost living with his sins of the past and those sins yet to be committed is provocative. For some educators the message is reminiscent and familiar; for others, it may appear overdrawn. Because it contains the essence of problems real and implied, it set the stage for the Institute small group discussions.

This chapter also includes status reports by Richard Outland, Robert Stone, and Frances Berko, each of whom has administrative responsibility in programs for crippled and other health impaired individuals. Their vantage points differ: a state department of education, a children's hospital and a community program for children not eligible for attendance in their local school systems. These reports combining fact and opinion reflect both causes and results of current practice, attitudes and reactions. The use and connotations of categories to classify populations appear evaluative in nature and elicit feelings along various dimensions. The effects of these classifications on educational

placements and programming were consistently among the targets of the discussion groups.

The following papers are neither parallel nor equivalent. Their variance reflects the status of the field and their implications for change were seen as significant and stimulating. Also strongly felt were the impact of and need for differential educational planning as well as the breaking down of stereotypes in order to work against inertia and imprecise instructional approaches.

ONE DICKENS OF A CHRISTMAS CAROL

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Office of Education

This particular Institute represents the culmination of a long felt need. In the three years that I have been in the U.S. Office of Education, the topics which you will be discussing have been present in the minds of the review panels as they come in. Essentially the problem appears to be one of redefining the current nature of the area of the crippled and, through conferences such as this, obtaining the counsel of top professionals as to the future directions and development in this field.

This is the time of the year at which I become quite embued with the spirit of Christmas, as you might have guessed from the title of this talk.

The theme will cleverly enough, center upon Dicken's Christmas Carol. To some, I may symbolize Marley's ghost; living with his past sins, shackled by the chains of the bureaucracy and the regulations that accompany it.

Tiny Tim will represent the plight of crippled youth and the area of COHI. Scrooge, I suppose, would probably have to represent the resources that are available from the American public and other sources. Bob Cratchit obviously represents the parents of the crippled child. And I think with some imagination, you can fill out the other roles as we go along. Tonight I'm going to lead you through that old and very well known story. We will pass through the nights with the Ghost of Christmas Past and the Ghost of Christmas Present and the Ghost of Christmas Yet to Come.

Let us begin, if you will, with the Ghost of Christmas Past. I hope that you'll forgive me if you find that I've drawn upon some of my own

experiences. They get mixed up and become identified with different aspects of the story.

Some years back, special education for the orthopedically handicapped was almost totally and directly related to the medical model. I go back some 35 years in my association with the medical model as far as crippling conditions are concerned.

Most of the children, benefiting from special education in those days, had conditions that really did not necessitate any unique educational interventions; for example, the children with post-polio residuals such as myself, osteomylitis, bone T.B. They were taught and handled in about the same way as any children were. Those children who were really handicapped, as I recall, the few severely cerebral palsied children that were in the program, were not expected to live very long. They usually developed respiratory infections that proved fatal to them in their late or middle teens. For that reason neither the medical treatment, or the educational programs for these children were given very serious consideration.

Special Education, at that time, was essentially regular education in a special setting, for example, in homes, hospitals, and fresh air or opportunity rooms. But the education program itself was not terribly different. The status of education, as I recall it, in medically oriented facilities, was condoned, so long as it didn't interfere with the medical routine. It was condoned rather than necessarily encouraged, definitely assigned to a secondary position. As far as they were concerned, the body was more important than the mind. If the body goes, the mind goes with it. It doesn't always happen the other way.

Let me tell you some of my own experiences as a patient in the Shriners Hospital. In Portland, Oregon, where I spent a total of three years, this was my first introduction to special education. The educational program there consisted of Miss Joyce. She was known by another name. The children in the hospital called her the "goat lady." In the five or six years that I was in and out of that particular hospital, I never knew anyone who knew exactly why they called her the goat lady. But speculation was that it either was because she raised goats, or because she smelled like one. Miss Joyce wore a formless smock that served to cover a formless form. She had gray and yellow streaked hair and a dour expression. During the entire time that I knew her, she had a running battle with the head nurse. One of them would move something here and the other one would move it back, and the battle would begin; each accusing the other of interfering with their program. You could always tell when Miss Joyce was coming by the squeak of the old cart she used to wheel down the long hall. You could hear her coming and your anxieties would build as she got closer.

Perhaps the most fascinating thing about Miss Joyce was her collection of instructional materials. On her cart was probably one of the finest collections of outdated books and totally irrelevant work-

books ever brought together in one place. The high point of the whole cart however, was a stereopticon with boxes of battered slides. If you were good and got your work done, you were permitted to stare at those slides. I'll assure you that after having seen the Eiffel Tower in three dimensions about fifteen times, the motivational value drops off tremendously. But that is what constituted the educational program, and it happened about two or three times a week. For children who were very concerned with much more basic life functions, that was a hard thing to take as an educational experience.

I've given you some of the unpleasant events. Actually, as I recall the story, the Ghost of Christmas Past recalls a rather joyous time. Scrooge went back and reviewed his youth. He relived all the happy things that had occurred to him, and I could do the same. They may not have seemed as joyous to me then as they do now, quite frankly, but I can give you some glimpses of some of the things that did happen to me which I think provided for future happiness, if not immediate happiness.

I can remember a second grade teacher who provided me with homework, and used to come to the house on her own time without pay to bring me materials. She was also good enough to welcome me back into her second grade class when I was well enough to return.

I can remember the town librarian who used to hold books off the shelf that she thought I would be interested in reading, so the other kids wouldn't get them. I had a steady supply of books and, incidently, she had very good taste in her selections.

I can remember a little girl who would frequently push me back and forth to school in a home made wheel chair made from the wheels of a baby buggy and a wicker chair. That same girl, ironically, now has a son of her own who is neurologically impaired.

I can remember a school superintendent and a principal who arranged to have the older boys carry me up a scary set of stairs in a building that 35 years ago was a fire trap and they're still using it today. I can remember a physical therapist who was as much concerned with building character as she was with developing muscular strength.

I can remember a rehabilitation counselor who had more confidence in my ability than I did.

And I can remember the successor to Miss Joyce, a delightful hospital teacher, who took a great deal of pride in keeping her children up to grade with the children in regular schools.

I received the best medical attention available at that time, and I had parents who cared enough to do the right things, even though I resisted and created a great deal of emotional conflict for them.

We've made some major steps in looking back through the history—significant steps, so far as our particular area is concerned. Medical science has totally changed the basic nature of the crippled population. It has virtually eliminated polio, osteomylitis, tuberculosis,

and other crippling agents. But the students remaining are predominantly those with complex hereditary, congenital, or traumatic disorders; such as cerebral palsy, muscular dystrophy, spina bifida, cystic fibrosis, congenital heart abnormalities, amputations and various other disabilities which are due to accidents, illness, toxic reactions, and what have you.

These complex, profound physical disorders present more demanding educational needs. These children may have multi-sensory deficiencies, perceptual inadequacies, communication barriers, social and emotional complexities, or they may have retarded intellectual ability. So the most effective teacher for the child with orthopedic, neuromuscular, or other chronic problems can no longer be just a regular teacher in a special classroom. Such a teacher may be required to have teaching skills which are at least as complex as the disorders of the child. Let me cite just a few that some people feel are important: 1) diagnostic and assessment skills; 2) a functional, medical, and therapeutic vocabulary; 3) an appreciation of the roles of specialists who work in the other disciplines; 4) an advanced knowledge of educational technology; 5) a sound understanding of all areas of exceptionality; 6) the ability to integrate academic learning with the objectives of vocational education and rehabilitation; 7) the ability to provide counseling to students and their parents; 8) familiarity with the other social agencies relating to the students; 9) the ability to effectively interpret both the program and students needs to professional colleagues; 10) an ability to absorb research and translate it into educational practice; 11) a willingness to objectively assess the success of the program and to modify it as necessary; and 12) capacity to maintain personal equilibrium.

While the individual with all of these attributes probably doesn't exist, I think we've made substantial progress in these directions. I'm sure that we have through the years developed an appreciation for the worth of the individual, regardless of the severity of his handicap.

The evolution of Federal involvement has been rather remarkable, in many ways. I think we're indebted to the early work that was done by people such as Elise Martin and Romaine Mackie, who did an amazing amount with very little resources. But the major impetus to education came when Public Law 85-929 was amended by Public Law 88-164. At that time, the broad concept of the Crippled and Other Health Impaired came into being so far as the training of teachers was concerned. From that time until the present, we have seen a continuous fractionalization of this area. It has been broken down into the areas of the Crippled, Learning Disabilities, Multi-handicapped and the interrelated area. At the same time that this area is being fractionalized, we are seeing an increased interest in the field toward the total abolition of categories. There, if you will, are the horns of a dilemma.

Well, so much for the Ghost of the Christmas Past, and on to the Ghost of Christmas Present. The best estimate that we have at the

present time, regarding the crippled population, is that there are roughly 192,000 school age children between the ages of 5 and 19 who might be classified as crippled. I warn you, that may be a medical classification, and not an educational classification. Of these, approximately one third of the children are receiving special educational services of one kind or another. An unpublished study, funded by the National Institute of Health, estimates that about 8,750 children diagnosed as cerebral palsied are born each year. Our experience is that about half of the children being served in facilities for the orthopedically handicapped and neurologically impaired are cerebral palsied. If you use that as a gauge, you can expect that there will be 17,000 new cases each year. These figures would not include other types of children who may be of interest to this group such as unwed mothers, epileptics, and short term illness or accident victims who require home or hospital instruction.

Current expenditures in the Bureau of Education for the Handicapped for direct services to crippled total about $6.2 million. About $4.8 million of this is expended as part of Public Law 91-230, Part B, of Title VI,A. Another $1.4 million is allocated through Public Law 89-313, which provides assistance to state institutions and state supported schools. There are serious efforts being undertaken to make an impact in the area of early childhood education. At the present time the Bureau is funding 41 projects in early childhood education. Seventeen of these involve crippled children to some extent, and three are specifically designed for crippled children. The United Cerebral Palsy Association of New York has one. Their demonstration class tries to identify children by the age of two and one half, put them in a part time program, and provide training to their parents. The New York University Medical Center provides a program for youngsters, mostly from 18 months to 30 months, utilizing outdoor play spaces as one aspect of the program. The Curative Workshop of Milwaukee has a program dealing with the improvement of speech and language in cerebral palsied children. They're concentrating on children under 18 months of age. You'll hear more about these efforts, I'm sure, in the near future.

The Bureau is also funding, through our Research Division, instructional materials centers and research and demonstration centers, such as the one at Teachers College, and the one in mental retardation at Indiana University, and the one in early childhood at the University of Oregon.

In addition, we are funding a number of individual, independent research projects. I'm really not in a good position to judge how good or bad some of these projects are, but I'm thrilled that someone is doing something. Cybernetics Research Institute—some of you may have seen their material at the last CEC Conference—is doing a study of man-machine communications systems for disabled children. They use

an electronic interface with an electric typewriter as a way of trying to develop communications skills.

The Downey (California) Unified School District has completed one study that dealt with the effectiveness of automated visual programming instruction with paraplegics and other severely handicapped students. At this time Wisconsin State University is conducting a study in which they are attempting to evaluate an integrated approach to the management of cerebral palsy. They are trying to see if it is possible to train people who can serve as therapists—speech therapists, occupational therapists, and physical therapists—as well as teachers and integrate all of these skills within one person.

There are a variety of other federal agencies supporting research for the handicapped which I will not try to enumerate. There are also a great many private, non-profit agencies, such as the Easter Seal Society, UCPA, and the National Foundation who are doing research. On the whole, however, there is an appalling lack of research, particularly in the area of the crippled. We were interested to know what we would find in this respect, so we went to the ERIC system and asked for everything they had concerning research related to the education of crippled children. We fully expected to be inundated with piles of sheets, giving an abstract of studies that have been done. Let me show you what came back. This material represents what has been entered in the last seven or eight years of research. There are at least 105 brief abstracts of research* and many of them have little or no relevance, that I can see, to the problems of educating the crippled child. That is where we are.

Are we doing better in any other respects? Let's take a look at training. A study was done by Herman Saettler, not too long ago, in which he surveyed the growth of programs through the years. Twenty years ago, in the United States, there were eight programs training educational specialists to work with the crippled. Eight years ago there were 21 undergraduate programs and 23 graduate programs. Last year there were 52 undergraduate programs. It is interesting that only 22 of these applied to the U.S. Office of Education for funding and 17 of them were given grants. There were fifty programs that indicated some kind of graduate study in the area; thirty of those applied to us for funding, and twenty-four were funded. Of those, only six were providing post-master or doctoral level programs. To date this year, we have had requests from only 17 programs at the undergraduate level, and twenty-five at the graduate level, including nine at the post-masters level. I fear that some of these will have a difficult time meeting the standards expected by the review panel.

*This material, dated April 1970, is available through CEC Information Center on Exceptional Children, Council for Exceptional Children, 1411 Jefferson Davis Highway, Arlington, Virginia 22202.

What about the number of students that are being enrolled? During the 1968-69 academic year, there were 513 juniors, 581 seniors, 260 full-time and 500 part-time master's students, and 58 full-time doctoral students. Of the doctoral students, only 14 were finishing their training. I know quite a number of these students, and many of them did not take positions in our field.

So far as the levels of federal funding are concerned, the amount awarded over the last years has remained relatively constant. There has been an increase of $200,000 over the last five or six years, bu the requests for funding over that time has shown a steady decline. We still are not, of course, meeting all of the requests for funds. The requests exceed the amount of money available, as in all areas. We are most fortunate in this area, however, because 60% of all the full-time graduate students in training are getting some kind of federal support. That is in contrast with about 50% in all of the other areas.

The Division of Training Programs has one funding source which we call Special Projects. These are monies which we use to fund new and innovative types of training models. Through this program, we encourage people to develop new ways of training the old kinds of people, or to develop programs training people for new kinds of professional roles. At the present time there is not one special project currently funded in the area of crippled; and, to the best of my knowledge, we don't have any applicants for such grants. This year training funds to be awarded in the area of the crippled will total about $1.4 million. This is a 2½% decrease from last year, and the difference in the amount of money will go into the general budget for development of more special projects.

Where are we now in the analogy so far as Tiny Tim's health problems are concerned? The estimated need that is reported by the Bureau's Planning Office is for 5,700 teachers, and we would need more if we fully implemented the early childhood education aspects of the program. We're running into problems here, my friends, in that many of the fellowships and traineeships given in the crippled area are going to questionable purposes. We get reports from colleges that are having a difficult time recruiting students to take the fellowships they have to award. As a result, there are many students who are being given fellowships awarded in the area of the crippled who have no particular interest or any plans to pursue work in this field when they finish. It would seem easier to obtain a grant in our field than in some of the other fields where the demands are greater.

Tiny Tim is not dead, but he is very sick. He is limping along, and it may be that the federal funds are being used as a crutch to hold him up at the present time. His arteries are not pumping leadership personnel into the field, and so far we have a very inadequate diagnosis of his illness. Where then does that leave us? It brings us to the Ghost of Christmas Yet to Come.

To summarize some of the basic problems and questions that we must face in our field:

1. Who are the children that need and require help?
2. What are their specific needs?
3. What special skills, if any, does the teacher need to provide the necessary educational services?
4. How can these services be provided in the most effective and efficient manner?
5. How do we evaluate the success of our efforts?
6. What are our responsibilities to the total therapeutic environment of the child? For example, how do we interact with the M.D., the occupational therapist, the physical therapist, the speech therapist, the psychologist, and perhaps more important, with the regular school personnel?
7. How do we go about updating our skills?

In many ways we have not improved since the days of Christmas Past. There are still too many Miss Joyces with us today, and I fear there are not enough school principals and regular teachers who are willing to take the chances they did when I was young. What are the possible outcomes if we can't adequately answer these questions or make meaningful changes? Well, if Scrooge can't be convinced of the need then the resources will be denied. Tiny Tim may die because, quite frankly, there are other Cratchit children who are in need of the sustenance necessary to survive. There is simply not enough food in the house.

Let me translate more directly. If sufficient need cannot be demonstrated, then the funds to the area of the crippled may be diverted into other higher priority areas; for example, learning disabilities, the multi-handicapped, the interrelated, and the general field of early childhood education. At the present time, the funding of fellowships is under severe attack at the federal level. We, in the Bureau of Education for the Handicapped are the only Federal agency at the present time that I am aware of that is still funding a conventional fellowship training program.

Why is this? I'm sure you are all aware of the fact that we are now faced with an over supply of teachers in regular education. There are responsible people on Capitol Hill who feel that, because of this, it is going to become increasingly easy to attract teachers from the field of regular education into special education. Therefore, the kind of financial support provided in the past will no longer be necessary. There is a movement toward the support of short term training programs and the development of new models for manpower development.

As I mentioned before, our new funds are going into special projects. The crippled area is not now moving in this direction; and if that continues, the conclusion is evident. That is where the money will likely go, and if the crippled area doesn't follow, then it simply won't have the money. Quite frankly, our lack of research may result in our

being buried in our own ignorance. People will speak badly of us, just as they did of Scrooge.

Well, it's at this point that the analogy falls apart, if it hasn't already. It falls apart because we're not dealing with fiction. We're dealing with a very serious problem. There is no certainty that we will be able to wake up and make peace with the world. Scrooge may really find it much more satisfying and profitable to ignore this area, or to make his charity in some other way. We might wind up with a bigger "turkey" than the Cratchits ever contemplated.

You, as conference participants, have been called in to provide expert consultation as to the condition of Tiny Tim. We would like you to examine the patient. We would like to have you make a diagnosis of his needs, and we would like you to prescribe treatment. You may decide to administer a placebo and then let nature take its course. You may decide that you should inject a tonic to revitalize the system. Or you may decide to engage in euthanasia as the most humane course of action. If you do your work well, I will respect any decision that you make.

The report of this conference should either describe the autopsy, or it should outline the course of treatment. The outcomes of this conference will have a significant influence on the direction and the character this area assumes in the future. I have great confidence in the group here for these three days, and I am most pleased that you agreed to come. All that is left to say is "God Bless us everyone."

CRIPPLED AND OTHER HEALTH IMPAIRED– TRENDS IN POPULATION CHARACTERISTICS AND IN MEETING EDUCATIONAL NEEDS

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Public school programs excluding hospital programs for crippled and other health impaired will be the focus of this particular discussion. Since I have a responsibility for providing leadership at a state level, the State of California to be specific, I will use the programs serving

crippled and other health impaired in that state as my major frame of reference. This frame of reference has not been chosen because California has solved all of its numerous problems faced in educating the crippled and other health impaired, but because I have had direct contact with the programs in that state for a number of years.

Trends in Population Characteristics

Time will not permit a discussion of all such trends; however, let us look at five that certainly have a major impact on the educational scene.

1. There has been a significant decrease in the crippling conditions resulting from infectious diseases. Such conditions as poliomyelitis, osteomyelitis, and tuberculosis of the bones and joints have been reduced over the years by advancing medical science. Poliomyelitis accounted for 14.5 per cent of the special programs for crippled and other health impaired in 1950, dropping to 7 per cent in 1960, and rarely do we see a new case today. However, we do see a considerable increase in crippling conditions resulting from trauma. The National Safety Council estimates that for this year there will be at least 50,000 children permanently crippled or disabled by accident. Over half of the crippling accidents occur to children under five years of age. If you have recently researched the literature in order to pull together some hard data regarding the incidence of crippled and other health impaired including multiple handicapping conditions, you will agree that the time is right for a new nationwide study.
2. The rather recent rubella epidemics have produced a group of children with crippling conditions accompanied by numerous multiple handicaps including mental retardation, severe visual defects, and major hearing impairment. Many of these children are still without educational services.
3. Children with a severe physical impairment and severe mental retardation are now being enrolled in public school programs. Ten years ago many public school personnel were saying their school programs were not tooled up to serve these children and admission was denied. A number of states now have or are in the process of developing mandatory educational programs for the severely mentally retarded. Parents of crippled children with severe mental retardation are urging and even demanding like educational services for their children. Professional personnel working with the crippled and other health impaired are revising their entrance requirements. Are our present crop of teachers prepared to serve these children?
4. The age of entrance into public school programs and the age of termination from such programs are also taking on a "new look." The need for early admission of the crippled and other health impaired into school programs has long been verbalized and backed by respectable research. One of the most encouraging developments of recent years has been the increase in the number of nursery school classes for children who are crippled or otherwise health

impaired, where these children can come together with other children several hours a day and have the benefits of speech, physical, and occupational therapy. During the 1970 legislative session, California passed a bill making it permissive for school districts to enroll these children in public school programs at the age of 18 months. Currently the Stockton Unified School District in Stockton, California, is operating a ESEA Title VI project of "Children with Delayed Development." The project enrolls children at the age of 18 months with a team made up of a teacher, a physical therapist, and psychologist going to each child's home to work with both the child and his parent or parents. Again, do we have teachers prepared for such an assignment?

In 1960 it was not uncommon in California to exclude a crippled pupil from a public school program between the ages of 16 and 18. Many school programs are now keeping their pupils until the age of 21. No doubt many of you are asking the question and rightly so, "Are these pupils facing the same kind of an educational program they received at age 16 or has a program been developed to meet the educational needs of the older teenagers?"

5. A number of crippled and other health impaired minors with average ability or better who ten years ago would have remained in segregated day classes, are now being enrolled in regular classes with necessary supplementary educational services. Such services include supplemental teaching, teaching aides, specialized equipment, and special transportation. With this change in pupil placement, the pupil population remaining within the special day classes tends to be the pupils who are more severely involved with multiple handicapping conditions.

Trends in Educational Needs

Although we cannot discuss here more than a few selected trends in meeting educational needs of the crippled and other health impaired, I hope that the following six points presented will serve as a catalyst for a much broader discussion of educational needs.

1. In the past, many schools serving the crippled and other health impaired have been built in segregated situations far away from the regular educational scene. Fortunately, the current trend is to construct physical facilities on regular school sites so that these children are permitted the opportunity to have as much contact as possible with non-handicapped children. It is also important that the non-handicapped child learn to know and understand the handicapped child. Some of the crippled and other health impaired are able with appropriate supporting services to spend part or all of their day in the regular classes with therapy services available in the special education unit. Those who are not able to be integrated into regular classes are encouraged to participate in regular school activities such as assemblies, lunch periods, and certain playground activities.
2. Comprehensive and continuous planning is being emphasized for these pupils. Many school districts indicate that they make a long range plan; however,

these plans are often recorded in the heads of the teachers. Some districts have found it helpful to develop a form for recording such plans including all of the disciplines involved in service to these pupils. Such a form frequently consists of four columns, column one being the abilities dealt with, *e.g.*, communications, reading written language, self-help skills, locomotion, and social-emotional adjustment. The second column would indicate the present level and length of time the child has been at that level; the third column, probable expectancy level for the current school year; and the fourth column, probable expectancy level at the termination of a particular school level whether it be elementary or secondary. These plans are invaluable to evaluation committees when they are discussing the progress of a youngster and the determination of future plans. Unfortunately, some school districts are still playing the educational scene by ear. The admission, evaluation, and dismissal committee meets in May to determine that a particular pupil will terminate school at the close of that current school year without any further planning. This is grossly unfair to both the pupil and his parents. There are better ways to handle this situation.

3. More emphasis is being placed on what specific skills are being taught to what specific pupils rather than just keeping pupils comfortable and happy. One sees a greater emphasis on diagnostic and prescriptive teaching resulting in definitive educational goals being achieved.
4. School plants are being contructed to provide non-separated comprehensive services. I know of two new schools serving the crippled and other health impaired where therapy units do not exist as such. Classrooms have been enlarged and the therapy, both physical and occupational, is actually conducted within the classroom with some very exciting results.
5. Opportunities at the community college level are being made available for the crippled and other health impaired. These colleges are establishing resource rooms with trained special education teachers, supplying specialized equipment, and providing special transportation. Many of the community colleges have outstanding vocational training programs available.
6. Too many educators are still being unrealistic about the curricula being developed for the non-college-bound crippled or other health impaired. Follow-up data gathered recently at the University of the Pacific, Stockton, California, regarding pupils who have terminated their school programs indicate that a high percentage of such pupils are returning home to do nothing but watch television. The curricula being pursued have not prepared them for competitive employment or employment in sheltered work training centers. Possible, competitive employment is not a realistic goal for some of these students; however, the effective use of the many hours of leisure time they face is a realistic goal.

Summary Statement

Yes, the population characteristics are changing. Some categories of crippled and other health impaired have greatly decreased in numbers;

however, other types of handicapping conditions are taking their places. The crippled child with severe physical impairment and severe mental retardation is being enrolled in public school programs. Crippled and other health impaired are entering school programs at an earlier age and staying longer, with an increasing number moving to regular classes leaving the more severely involved with multiple handicapping conditions in the special day classes.

Six trends related to meeting the educational needs of crippled and other health impaired children have been presented; the five positive trends being better integration with the non-handicapped, comprehensive and continuous planning, diagnostic and prescriptive teaching, construction of physical plants to provide non-separated comprehensive services, and community college opportunities; the negative trend being the lack of realistic curricula for the non-college-bound pupils.

HOSPITAL POPULATIONS

Robert Stone

Executive Director, Blythdale Children's Hospital
Valhalla, New York

I have been saying publicly for the past ten years that the number of youngsters requiring hospital intervention for chronic disease is increasing. I thought that in fairness I'd better do some checking to find out whether what I've been saying with such certainty for all these years is correct. After searching the literature, I was delighted to find a number of studies which indicate that I was correct in describing an increase in children with long-term illness. But I was also disturbed to find that an equal number of very fine studies indicate that I'm absolutely wrong. The explanation of this paradox reminds me of the blindfolded men feeling different parts of the elephant and trying to describe the animal. There are a number of demographic factors at play. I would like to cite just a few.

We know that the incidence of poliomyelitis, osteomyelitis, rickets, tuberculosis and many of the other classical crippling diseases has virtually diminished down to nothing. Many orthopedists say that the problem of the "crippled" child has disappeared.

In addition, because we are so aware of the emotional trauma of hospitalization, we try to avoid putting children in a hospital whenever

we can. So, today, if we still saw many children with, say, tuberculosis of the spine I suspect that we would probably try to reduce the time in the hospital much more than we would have in the past and we would try alternative programs such as home care.

The desire to avoid hospitalization of a child is a tremendous factor influencing many medical people and sometimes I suspect that our wishful thinking is getting in the way of the reality of the situation. I wonder whether this isn't true of educators as well. I suspect so when I hear some who say that they would like to do away with programs of special education and totally incorporate the needs of the exceptional child into the regular school.

There are also a whole series of medical factors which have substantially reduced the chronic conditions. Certainly we have better prenatal and postnatal care, better surgery, vastly improved anesthesiology, better diagnostic techniques, new drugs, and so on. The whole revolution in medical treatment has brought about great reduction in illness and disease. Just think, that thirty-five years ago only about 38% of the children in this country were born in hospitals. It's a remarkable change that's taken place. Another major factor is that we now know a great deal more about nutrition and its importance in avoidance of disease.

We also must consider the tremendous growth of specialized personnel and of treatment facilities. Better and earlier diagnosis has resulted in more cures of many problems. In the past 100 years we've gone from 185 hospitals to 8500 in this country. Particularly in urban centers we see how early treatment can really avoid many long-term problems.

So, with all of this improvement in prevention, early diagnosis, treatment and avoidance of prolonged hospitalization, it is very easy to see why many people have come to the conclusion that there really is no need to worry about treating children for a long-term condition. We don't really have to worry since the problem is disappearing. If this is so, why is my hospital still in business? Well, there still are many children in need of such care. Just in absolute terms there are more children and there are bound to be more problems. Second, we're doing a better job of case finding. As more people receive better medical care, diseases that would have gone undiagnosed have been uncovered. Third, and I think perhaps most important, as medical care becomes more sophisticated, we are keeping alive children with severe limitations, and therefore, you have problems in education. I think perhaps the clearest picture of this is in paraplegia. A very short time ago, paraplegic children or adults died rapidly after onset of their paraplegia. They frequently died from urinary tract infections. Well, now we are very smart. We know much better how to treat urinary tract infection and as a result we can keep a paraplegic child alive to face adult life. Consequently, folks end up with the problem of providing an appropriate education for such an individual.

I also believe we have a great deal more injury due to trauma in this country. I might mention, the automobile accident rate grows steadily. Increased sports activity, and in general, increased mobility and affluence creates increased trauma.

I also think there's an attitudinal change that's starting to have an impact. A few years ago, we had so many youngsters in life-threatening situations with acute illness that the problems of the chronically ill child seemed easy to put aside. There was a great willingness to put such a child "away." Put him in the country or any place where he didn't appear in front of us. Now, I think there's an increasing awareness of the legitimate needs of such children. Parent groups have made us realize our obligations to these children and we must treat them and deal with their needs.

I want to cite two other areas. One, we are starting to see in our hospital an increase in the results of the "drug society." There are five youngsters who are there, right this moment, with after-effects of barbiturates, alcohol, or heroin. And that's an "exciting" new field for us to go into. Second–I couldn't prove this one either–I strongly suspect that the social pathology in this country is increasing and we are seeing more cases of child abuse and the "battered child." It has been suggested that the number one cause of death in children in the United States, if we really know all the facts, would be child abuse.

I started to make a list of the various kinds of long-term medical problems that we deal with at our hospital, and it's a long "laundry list" of the various organs of the body and the diseases that can affect them. I really don't think I'm going to waste your time and mine by reciting them. I will simply say the following: Ten years ago, when I came to Blythedale Children's Hospital, we treated, essentially, two kinds of diagnoses at the hospital; both of them orthopedic. One is a disease called Legg-Perthes' Disease and the other Idiopathic Scoliosis. On such a limited base, we had serious questions as to whether we should remain open. A number of people, predicting a drop in need, suggested, with great conviction, that we should go out of business. We have had two expansions in the last ten years and we now have decided to limit the size of the hospital. The difference is that we are not fixed on a rigid admission approach. In recent years, we have been flooded by visitors who come and ask how to run a hospital for children with long-term illness. And do you know, who those people are? For the most part they come from large teaching medical centers who are increasingly finding that the emphasis in hospital pediatrics is changing from acute problems to chronic disease. If you folks don't think that's going to affect you, take my word for it, it will.

The Nature of the Areas of Specialization

AN EFFORT TO TEACH THE MULTIPLY HANDICAPPED CHILD

Frances G. Berko

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Served by the Special Children's Center, a voluntary health agency, special education in the seven country rural areas of Upstate New York consisted of school-aged children who were excluded from school by reason of their handicaps. Home instruction was both scarce and qualitatively substandard. About 25% of the children excluded from school had cerebral palsy or spina bifida. They were either non-ambulatory or barely ambulatory. A few were moderately to profoundly hard of hearing. Numerically the largest group were children who had a cluster of language learning problems often associated with brain damage and who had failed in kindergarten or first grade. At least half of these children had known injuries to their central nervous systems, and an additional 15-20 per cent were prenatally and/or developmentally suspect. Upon diagnostic evaluation, the psychological report revealed that all the children, regardless of diagnosis, had a commonality of dysfunctions in the areas of language comprehension and fluency, perception, motor integration, and ability to symbolize. There was considerable variation in the degrees of hyperactivity, behavioral disorders, and attentiveness among the original group.

The Special Children's Center had an ongoing program of diagnostic evaluation, individual physcial, occupational, and speech therapies, and pre-school education for the handicapped child over the age of three. This latter program became so populated by handicapped children of school age who were receiving other of the Center's services that the younger child for whom the pre-school program was designed too often landed on a waiting list for admission to the program. At this juncture, the Board of Directors of the Special Children's Center made a policy decision which, over a period of six and a half years, has had many far reaching effects on the quality of special education throughout most of this rural area. They decided that major responsibility for educating the school-aged child should fall to the public school, while the community agency had the responsibility for assisting the school in designing and implementing viable education programs for these children.

In 1965, the first classroom for multiply handicapped children was opened at the Special Children's Center. The Ithaca Public Schools, after a joint interview with the Center, hired a certified special education teacher and a teacher's aide, and provided the equipment and

This presentation was accompanied by a video taped depiction of the program the Special Children's Center in Ithaca, New York.

most of the supplies. Under agreement, the supervision of pupil placement and classroom curriculum was the Center's responsibility. The teaching staff was considered part of the Center's staff. From the beginning, it was understood that the average stay in this segregated educational environment would be about two years. When the child seemed no longer to benefit from the therapeutic services of the Center and/or could cope successfully with a less structured placement, he would then be placed in another appropriate public school setting. Essentially, these agreements, policies, and procedures remained in effect through December, 1970, or as long as the classrooms for the multiply handicapped were housed at the Special Children's Center. The additional obligation of the public schools to pay rent for the classroom space occurred after the responsibility for special education in the area was transferred from the Ithaca School District to the Tompkins-Seneca-Tioga Board of Cooperative Educational Services in the Winter of 1966.

In 1965, the first classroom was used for two half-day programs, each with an enrollment of ten children. By the Fall of 1970, there were six full-day and one half-day classes. The maximum enrollment for each classroom remained at ten; each had an assigned teacher's aide. Of the original twenty students, 19 received one or more individual therapies from the Special Children's Center as a regular part of their school day. All children enrolled in these classrooms were evaluated by the Center's diagnostic team consisting of pediatricians, neurologists, orthopedists, psychiatrist, pyschologist, and speech pathologists, under direction of a physiatrist with pediatric training. Physical, occupational and/or speech therapy was prescribed for 80 per cent of the students. In addition to the teaching staff, the Board of Cooperative Educational Services added a speech correction teacher and a physical educator to its personnel serving this group of seventy students. Each child participated in physical education four times a week. In 1968, the program of the Special Children's Center moved into new quarters; housed in the same building was the Tompkins County Mental Health Clinic. Children for whom psychotherapy was prescribed left the classroom for therapy in much the same manner as they went to the other individualized therapy programs. In 1970, over 70 per cent of the parent counselling services of the Center was given to families of children enrolled in these BOCES classrooms.

Within the structure of this interdisciplinary approach to the educational needs of the child, the role of the classroom warranted precise definition. A basic premise was established early. The purpose of education at the primary and elementary level is academic learning within the child's potential. This meant that alternative educational programs for these children must be devised so that they could learn the same basic tools and information that any child at their ability level is required to learn in school. The teacher was expected not only to

understand the nature of each child's language-learning-behavioral deficits, but also to devise techniques of teaching the basic academic skills. For education to be realistic, the cognitive aspect of classroom learning received particular attention. No academic skill was considered mastered until the child could demonstrate utilization of that skill in a variety of situations appropriate to his functional level.

The criteria for classroom grouping was established for the successful implementation of these concepts. Developmental and/or academic levels were chosen as the base rather than diagnosis, age, or nature of language-learning-behavioral dysfunction. No classroom group had a chronological age range of more than four years. In each group, however, there were children diagnosed as having cerebral palsy, brain damage, emotional disturbance, and/or a multiplicity of handicaps. Children with spina bifida, hydrocephalus, epilepsy, and marked hearing loss were also in the program. Intelligence levels on the basis of I.Q. tests, varied from low educable to above average. However, regardless of the precision, criteria, or number of factors considered in establishing the basic classroom groupings, it was also necessary to re-group the children above the kindergarten level for specific learning activities, particularly reading, arithmetic, and physical education. These programmed regroupings, requiring a form of team teaching, considered both the child's skill level in the specific area and his overall potential. Thus, a second grade reading group for nine year olds may be reading from a standard series, while a similar level group for pre-adolescents of twelve would be using a variety of materials including the daily newspaper, TV Guide, and experience stories.

The home room teacher's curriculum was devised to integrate all aspects of the child's learning into functional performance within the programmed academic progression. At the same time, the activity was planned to permit allowances for individual differences; it also allowed the teacher to meet each child's educational need at his own level, despite a range of ability within the group.

For example, in one classroom, depicted in the videotape produced for the Institute, children were between the ages of 8 and 12 years with an I.Q. range of 70 to 85. However, one non-ambulatory cerebral palsied child had a measurable I.Q. in the low 60's with academic functioning at the group level. Demonstrated also were a variety of gross motor activities (jumping, hopping, skipping, crawling) on a number ladder from one to ten. Each child understood numbers from one to ten. Some of them had the ability to perform the motor activities proficiently. The real learning occurred in the integration of command comprehension, number concepts, and motor activities. It often became obvious that the non-ambulatory cerebral palsied child, prone on a scooter board, might be more successful in motor-planning and executing the integrated activity than the non-physically disabled, clumsy, brain damaged child.

It was felt that spelling and reading skills require basic abilities in directionality, series learning, form constancy, spatial perception, and auditory and visual symbolization. At the primary level, a spelling lesson began with exercises in any or all of these basic areas. Before the lesson was half over, these skills were integrated into a combined word recognition and spelling activity. Classroom curriculums designed to overcome perceptual motor deficits without immediate utilization of the perceptual motor performance in meaningful academic areas seemed self-defeating. By definition, the students in these classrooms were deficient in abstracting, generalizing, and habituating. They had the potential for learning the basic skills of school learning, but such learning would not occur unless the teacher programmed his curriculum to make it happen.

While every effort was made to integrate all phases of the child's multi-disciplinary program into the classroom curriculum, it had become obvious that additional attention had to be paid to the child's ego development and self concept. One approach developed integrated a form of "group psychotherapy" into the language arts program. Originally, this was designed and monitored by one of the psychologists at the Mental Health Clinic; it was felt that without such consultation this approach should be undertaken most cautiously. For example, within their language arts program, a group of second to fourth graders of dull-normal to normal intelligence were permitted to choose topics for discussion several times each week. These nine to twelve year olds selected topics from rocketry to installment buying to the meaning of words. The academic merits of the procedure lay in the enhancement of oral language fluency. Periodically, the students chose to discuss topics more emotional, personal, and perceived as unique to the handicapped, including sibling interaction, their own perception of the disability, and similar topics. One video tape depicted a student-teacher discussion on "The Advantages and Disadvantages of Attendance in Special Class" which elicited these children's reluctance to leave the environment of special education for regular class placement, even though some of the participating students were considered physically and academically ready for such placement. The institute viewers' reaction to this taped discussion varied. Some thought it demonstrated the superiority of special education over regular education, while others considered it to be a forceful indication of the over-protectiveness of special education in preparing this type of student for coping with normal living in the community.

Despite the fact that each year since its inception in 1965-66, a minimum of 25 per cent of the students enrolled in the Tompkins-Seneca-Tioga classrooms for the multiply handicapped have experienced successful placement in less segregated school environments, the controversy still rages. Whether some of the children should have been segregated into special education classes was always questioned.

The Nature of the Areas of Specialization

While the Special Children's Center still renders diagnostic and therapeutic services within the new building, the "diagnostic approach" to special educational programming for the multiply handicapped has undergone major alterations, conceptually and programmatically. Some of these changes were long overdue, *i.e.*, more systematized transition into regular class placement. For others, evaluation awaits further experience. All the children have been re-classified for the school year 1971-72 into four "tracks": 1) those needing individual therapy and/or placement in the multiply handicapped classes for more than two years, 2) those needing individual therapy and/or such class placement for less than two years; 3) those whose emotional and/or behavioral aspects of the multiplicity of handicap are too severe to be considered part of the first group; and 4) those who belong in the second group but cannot achieve normal class placement because of educational retardation in comparison to their peer group of the same age. Separate curricula have been devised for each group. The classification of each student was made by school personnel without consultation with the initial evaluation team.

CHAPTER III

Conference Deliberations:

Problems and Issues

Pressures to change present educational patterns for the crippled and other health impaired populations came from a variety of sources: a chairman's provocative questions, a doctoral candidate's expression of dissatisfaction, the report of a practitioner's confusion as he attempted to relate his professional training to the real world of his students and their classroom.

Consensus was neither called for nor reached on the solutions to the multitude of problems identified during the six small group discussion periods. Consequently the issues presented in this chapter reflect a number of considerations and recommendations. In many instances, reported responses to problems are contradictory, inconsistent, and/or mutually exculsive options. Some proposed solutions represent opposition to change; others reflect uncertainty about the effectiveness of possible alternatives in present practice; and some, impatience with delay and what appears to be resistance to change. The fundamental classifications, categories, and terminology still remain ambiguous so that the ideas can be employed to evoke different, even conflicting loyalties in different situations. These loyalties lead to, or direct, action based on vague and changing value systems.

General agreement continued to be evident regarding a need for redefinition of the crippled and other health impaired populations. The present category is essentially medically defined and as such is not particularly useful as an educational description. A number of factors and combinations of variables were suggested as prerequisites to forming a description of the crippled and other health impaired populations. It was proposed that definition of this population be expressed in terms of the child's place on an educational-diagnostic-learning continuum; his functional interferences and restrictions, *e.g.*, physical, psycho-educational, and psychiatric; functional quotient which includes social factors as well as I.Q.; and early limited freedom of movement on the level and rate of skill acquisition.

After responses to the pre-Institute questionnaire were reviewed at the Institute in order to provide a generally acceptable frame of reference, the following statement emerged as the working definition:

The COHI population is seen in three dimensions: physical definition, functional problems, and programmatic modifications. The population is comprised of those children and adults who as a result of permanent, temporary, or intermittant physical or medical disabilities require modifications in curriculum and instructional strategies. Frequent separation from family and a lack of adequate parental guidance contribute to secondary emotional problems of the COHI population. The child's physical limitations are often the basis of functional deficits. The development of realistic expectation levels requires the identification of additional and unique instructional materials, equipment, and strategies for evaluation.

Discussions were then directed toward educational provisions required for the changing populations and toward professional preparation. As a guide, a series of questions was presented in random order to each of the eight discussion groups. The last session of the Institute was devoted to eliciting recommendations for the training division of the United States Office of Education's Bureau for the Education of the Handicapped. Where agreement appears to have been reached, it is so reported.

EDUCATION OF THE CRIPPLED AND OTHER HEALTH-IMPAIRED

The traditional approach to the education of physically handicapped students has discouraged the development of comprehensive school programs. An organized approach to continuous and comprehensive education for this population is basic to the move toward integration of the handicapped with the non-handicapped. Special reference was made to issues relating to program organization, administration, accountability, obtaining school services, program differentiation, and advocacy roles to assure comprehensive high quality education. A number of questions has been raised as issues to be explored further.

PROBLEMS	*ISSUES*
Organization and administration of educational programs	Are staffing patterns flexible enough to guarantee successful placement and guidance for all

children: the mildly disabled, the most severely handicapped, those needing educational placement changes, and those needing ancillary services?

How do the following psycho-social factors influence educational placement:

level of academic achievement
specific learning disabilities
level of social adjustment
relationships with peers
speech and language function
physical anomaly?

How do the following organizational factors influence educational placement:

architectural setting
teacher and staff attitudes
size of regular classes
need for ancillary therapies
transportation needs?

Who assumes responsibility for organizing an interdisciplinary team within a school district?

Might the purchasing of services for multi-handicapped children enable school districts to employ physicians, psychologists, social workers and others for relatively small numbers of disabled children and their parents?

Who is responsible for the supervision of teachers of crippled children?

Can transportation patterns be altered to shorten travel time, increase instructional opportunities, and enable increasing numbers of children to participate in group settings?

	What role does the National Instructional Materials Center system play in furthering the education of crippled and other health impaired populations?
Factors of power structure	How do political, economic, and inter-professional factors operate on the changing structures of special education?
	What realistic effect does the job market have on new curriculum and guidance emphases?
	What factors determine the standards for approving day and residential programs?
Funding patterns	Do federal and state funding patterns perpetuate educationally non-functional classification of children based on other than educational or developmental consideration?
	How can federal and state funding patterns be reorganized to assure the total range of services? Vacillating and passing emphasis on one age or disability group will not serve the best interest of the populations.
	What are the advantages and disadvantages of joint-community planning and regional expense sharing?
Accountability	Who is responsible for providing quality education programs for crippled children?
	Is a program viable when cost analysis shows relatively little "success" (by usual criteria) with marginal children?
	How can education of the crippled be assessed to determine the effec-

	tiveness of the professional preparation programs? What are the criteria for measuring success: educational achievement vocational status life adaptation social adjustment? To what extent can the education of crippled and other health impaired populations assume the responsibility for preparing a student for a society which is not ready to accept him?—for a rapidly changing society?
Case finding services	Will legislation to require mandatory reporting of children insure appropriate services? Will it assure inclusion of all crippled and other health impaired individuals in an educational program? Would a local or state council in education assist in coordinating, diagnosing, recommending, and providing services? Who in the school district should assume responsibility for identifying and referring crippled children with educational problems? How might colleges and universities build into all professional training programs skills that would facilitate referral of a child suspected of needing special education? What way(s) are most effective in reaching children in hospitals and other non-educational institutions including high risk clinics?
Child advocacy	How can comprehensive and ongoing services be assured to handi-

	capped children as they move from agency to agency?—from one physical setting to another?
	Who determines the appropriateness and accessibility of essential educational services?
	Should a universal system be adopted for recording achievement-learning experiences to facilitate program consistency upon transfer of the child?
	Does the operation of a data bank (for the centralization of information) available to selected personnel constitute a violation of personal freedom?
	What is the role of the child advocate in establishing the commitment of all involved agencies?
	Is there a place for an advocacy council?
Early childhood education	Toward what goals are infant and early childhood programs directed?
	Who should assume major responsibility for providing services to crippled and other health impaired infants?
	How can infant and pre-school programs be organized to include: early parental guidance other professional therapies educational program planning educationally relevant stimulation?
	What is the educator's role in infant programs?
	How and when can the effectiveness of early childhood intervention best be evaluated?
High school programs	Who should assume responsibility

for providing secondary school education for crippled and other health impaired youth?

What alternatives exist for the setting of tentative educational goals:
- regular curriculum
- special training–vocational and technical
- sheltered workshop
- semi-dependent living
- dependent homebound or day care?

What requirements are to be met if crippled populations are to be integrated into general high school programs?

- orientation of regular high school teachers to the difficulties encountered by crippled and other health impaired students and means of accommodation
- program differentiation
- availability of resource personnel or itinerant teachers
- development of good work habits on the part of the student (pre-high school practice in skills needed for integration).

What kinds of education programs are most suitable for the crippled child who is physically dependent?

What are alternative designs for providing special educational secondary school placements:
- residential setting
- five day boarding school
- regional high school

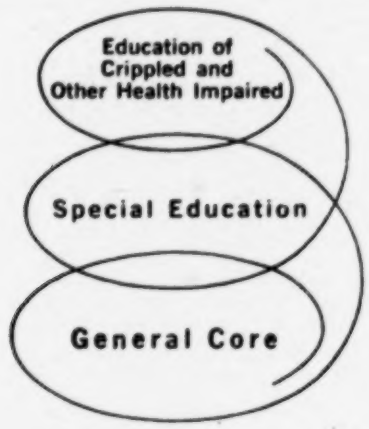
How might organized follow-up of handicapped college level students provide guide lines for strengthening secondary school programs?

Education of the gifted handicapped	What special provisions can be made to identify handicapped populations gifted in intellectual ability and/or with special talents in other areas? Through what means can gifted severely disabled populations reveal their unique responses and high potential for learning? What are the means of averting or at least determining emotional overlay which limit or reduce function and achievement of gifted students? How can these populations increase their involvement in social and political community activities? What vocational possibilities exist or can be created for gifted severely disabled persons? How can special school and community programs for the gifted be modified to include crippled and other health impaired populations?
Home and hospital instruction	To what extent is home instruction an excluding rather than including form of education? What are the special educational needs of homebound and/or hospitalized youngsters? How can home and hospital instruction be made a greater part of the education continuum? If children in home instruction programs and hospitals are to receive a bonafide high school education, what alternative designs for secondary education can be suggested: in-service special education for secondary school teachers in-service academic specialization for special education teachers

	use of community members in various capacities?
In-service teacher education	In what ways can continuing in-service education be organized to meet the needs of the child in a changing world as well as to modify programs in light of current research and innovative practice?
	Who is responsible for and most qualified to provide in-service education to teachers?
	To what extent and how can special education training be provided for medical and other non-educational personnel who are now or will be working with crippled and other health impaired individuals?

TEACHER TRAINING

At both the undergraduate and graduate levels, the following content was suggested as essential if teachers are to acquire the competencies necessary for effective instruction. It is anticipated that course work will be coordinated to an increasing extent with practicum observation, application of methods, and student teaching. Experiences would be structured to relate to a hierarchy of skills rather than an isolated body of knowledge. Evaluation would be based upon successful



application of these skills through varying degrees of complexity and at specified check points in the preparation program.

Participants suggested that a general core of skills and knowledge essential to teaching all children form the base of study in special education. The skills most often mentioned were related to the areas of *assessment, instructional approach,* and *coordination of services.* Building upon the core of basic knowledges, participants suggested a further refinement of competencies specifically geared to special education. The special problems of children who are crippled and have other health impairments require that further intensification of skills and knowledges be stressed.

The delineation of teacher skills was seen as reflecting a spiral model for training.

ASSESSMENT

General Core	Special Education Core	Crippled and Other Health Impaired
systematically observing behavior	understanding of psychopathology of exceptional children and youth	modifying tests and materials for this specific population
sequencing human growth and development: physical, sensory, perceptual, and cognitive aspects	preparing case studies including a profile of strengths and weaknesses in learning styles	understanding effects of physical impairment on intellectual development
research and statistical inferences	assessing strengths and weaknesses for vocational training and placement	understanding effects of physical impairment on learning style
relationships between cognitive development and measured intelligence	assessing function in affective as well as cognitive and physical domains	
psycho-educational assessment	modifying tools of educational assessment	

INSTRUCTIONAL APPROACHES

General Core	Special Education Core	Crippled and Other Health Impaired
social-cultural determinants of behavior	effecting change and employing innovative techniques, with recognition of one's own rigidity, biases, and educational approaches	appropriately responding to situations resulting from such conditions as incontinence, seizures, hysteria, critical illness, fatigue, excessive pain, fear of unfamiliar treatment or unusual responses to food or medication, diagnosis of terminal illness
theories of learning as applied to the instructional settings	acceptance of both the child's and the teacher's limitations	adapting physical objects (furniture, mate-
the value of motivation and the impact of the affective domain	modifying and developing educational materials	
management of children's behavior, individ-		

ual instruction grouping, scheduling

physical management of the classroom (temperature, ventialation) and manipulation of the built environment

use of video tapes, audio tapes, overhead projectors, and other audio-visual equipment

curriculum development: content, sequence, and timing

task analysis

communication skills development

motor performance

remediation techniques

developing a variety of intervention techniques suitable for use by other teachers or parents

improving communications: language, motor ability, speech, reading

providing the child with opportunity for autonomy and problem solving

using educational media and materials (commercial and teacher-made) to compensate for the sensory and social deprivation often imposed on the exceptional student

classroom designing (*e.g.*, assisting in floor planning, architectural modification); understanding of the built environment as a positive variable–as a teacher aide; skill in use of light, acoustics, view, grouping, access, circulation, texture, temperature, color, etc.

rials); and positioning the child properly (considering braces, balance)

developing means of compensating for and/or avoiding retardation due to irregular attendance and scheduling of therapies

employing methodologies for teaching gifted, retarded, emotionally disturbed, sensory and language handicapped, as well as those with other specific learning disabilities

modifying and/or creating materials which can be manipulated by the students regardless of limited movement, forced physical positioning or environmental uniqueness: emphasis on utilizing individualized learning materials, particularly those which the student can handle independently, awareness of the technical resources and innovations

using devices such as conversation boards, gestures, electronic aids, and other means for effective communication

using techniques for including physical education and recreation in the total program of crippled children

providing intellectual and sensory stimulation to children needing extended homebound or hospitalized care

designing and providing appropriate curric-

ulum for crippled and other health impaired children who will not be economically self-supporting

COORDINATION OF SERVICES

General Core	Special Education Core	Crippled and Other Health Impaired
cooperative planning with parents, parent education; work with parent organizations	understanding of terminology used by para-educational specialists, therapists, medical personnel, vocational counselors, social workers, and others	assisting parents in handling their attitudes (*e.g.*, over protection) and the attitudes of the non-disabled (*e.g.*, fear, rejection) including the regular classroom teacher
use of available resources to prevent costly and wasteful overlap	understanding functions of other disciplines; interpreting of reports in educational terms; functioning as an interdisciplinary team member	sensitizing various populations through such means as conferences, workshops, and program visits
coordination with other professional personnel, departmental management	providing support to the regular classroom teacher in terms of facilities, materials, equipment, and personnel	aiding crippled and other health impaired teenagers and young adults in dealing with problems such as masturbation, heterosexual and homosexual relationships
employment of itinerant teaching consultants	counseling and long range planning	understanding physical impairments and how they curtail employment opportunities
working with paraprofessionals; establishing criteria for choosing them		
creating cooperative tutorial structure		
knowledge of regulations governing programs and services at local, state, and federal levels		
student counseling		
establishing and adhering to criteria for differential educational placement		
assuming responsibility for educational placement and follow-up		

PROBLEMS AND ISSUES: TEACHER TRAINING

PROBLEMS	*ISSUES*
Meeting the needs of a multiply handicapped population	How effective are the various means of preparing the multiply handicapped: study in two or more areas of exceptionality preparation of resources teachers for all exceptional children a block system of competency areas (language learning processes, assessment, curriculum) a core of competencies unique to crippled children; preparation aimed toward one disability with supportive studies in other disciplines?
Criteria for admission	How predictive of teaching success are the following: past experience with crippled children previous academic record teacher expectations for himself and his students attitudes toward the handicapped a specially designed interest-aptitude scale?
	Should early field experience with crippled children be required before full admission to a program of professional preparation?
Adoption of competency-criterion based training model to provide for greater flexibility in course selection and involvement in program development	To what extent are all students forced to take the usually prescribed course work?
	How can opportunities be provided for gaining strength in areas of weakness or studying in depth another area of instructional relevance (*e.g.*, University of Puget Sound with Franklin Pierce School District; Webber State College in Utah with EPIC; and Florida State University Special Education)?

Considerations for practicum	How can field placements be matched to the competency level of students?
	What are the criteria for selection of practicum situations? Can they be differentiated according to purpose and competencies?
	Do teachers need differentiated training to work with crippled children in different settings, for different reasons, and for different periods of time, *e.g.*, disabled because of accident, severe multiple disability, long or short term immobility or illness?
	If teacher education institutions are to help teachers develop diagnostic skills and analytic approaches to teaching processes, need they practice in settings in which the acquired professional skills can be applied? To what extent can telecoaching systems for student teaching, microteaching, simulation, video-taping, and compartive study of program be realistically and effectively employed?
	Should prospective teachers be placed in non-educational agencies dealing with disabled populations, *e.g.*, health, mental health, welfare?
	Do students need early, prolonged, and extensive interaction with the personnel and sites in which they will actually work?
	How effective are college supervised camping and institutional experiences in combining educational theory and practice for pre-service students?
	How can teachers be prepared for interdisciplinary functioning?
	To what extent should departments

	of Special Education in colleges and universities provide practicum supervision for students enrolled in allied programs?
	Who should be responsible for organizing practicum for high school students and non-matriculated persons who will work with crippled and other health impaired populations?
	Of what value is a sequence whereby students spend the first semester of their senior year or masters degree program in an internship and then return to the college for their final semester when they can come to grips with learning problems they encountered and attempt to resolve them in a supportive situation?
Certification criteria	Should certification for teachers of crippled children be made on the basis of grade levels? (*e.g.*, preschool; K-3; 3-5, 6-9; 9-12)
	To what extent should certification for teachers of homebound children require preparation and experience in tutorial activities with a variety of handicapped (including multi-handicapped) children?
	What special preparation and certification, if any, should be required of cooperating teachers?
Preparing regular classroom teachers to work with crippled children	Who is responsible for planning and providing special education training experiences and knowledge about handicapped children to regular educators?
	To what extent can a special education teacher help other teachers in understanding and adequately programming for the handicapped child in the regular classroom?
	How can specifically designed

courses or summer institutes for regular classroom teachers be provided to give them insight into the educational problems of handicapped populations?

How can teachers be prepared to modify physical environments which unnecessarily preclude participation of the crippled and other health impaired in regular grades?

Should teachers of physically handicapped children teach in regular classes periodically?

Models for teacher preparation constructed by work groups during the Institute were based on the following assumptions:

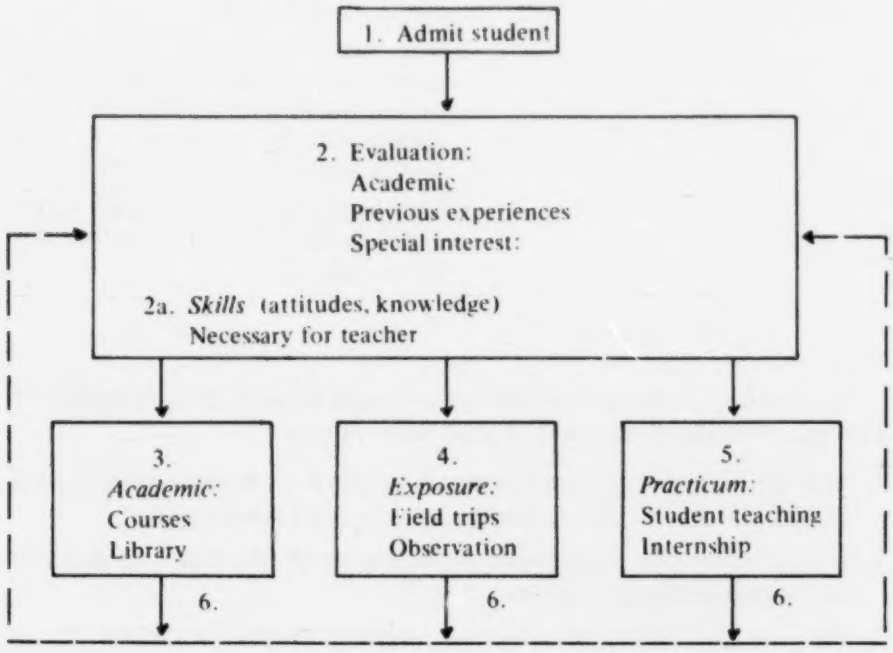
1. The entering student has had some minimal experience with normal children and/or academic background in child development.
2. Each student will participate in some form of practicum throughout his teacher training program.
3. The student may be either a masters degree candidate or an undergraduate. The sequence obtains generally for both.
4. Implementation of this design begins with eliminating existing courses. Teacher-trainers focus upon each student and design learning experiences (probably courses) which result in the greatest possible growth in terms of the skills prerequisite for good teaching.

Among the plans presented are the following models depicting sequence and content.

Conference Deliberations

Model I

Individually Prescribed Instruction



At #1 the college student is admitted to the teacher training program. He is evaluated by his advisor(s) in terms of his past academic preparation, relevant experiences, and special interests (#2). His advisor(s) are cognizant of the skills which are important for the teacher of crippled children (2a). Blocks 3, 4, and 5 represent the available means of developing the necessary skills in the teacher. The particular experiences and sequencing of these experiences will be different for each student. #6 represents an evaluative (feedback) component; at intervals throughout his program, the student will (returning to #2) (re)evaluate his progress, as will his advisor(s). Future planning for each student will be based on the re-evaluation.

Model II

Undergraduate Level Program for the Preparation of Teachers of Crippled and Other Health Impaired

Competencies			*Practicum*
Freshman	1 2	Continuum: Pre-school through adulthood; minimal to severe and including multiple handicap	Observation
Sophomore	3 4 5		Semi-participation
Junior	6 7		Regular class practicum
Senior	6 8 9		Crippled and other health impaired practicum
First Year Teaching	Evaluation of self and of the University program	Self-evaluation and on-going staff advisement; "sensitivity"	In-service follow-up observation and training

CONTENT OF COMPETENCIES AT UNDERGRADUATE LEVEL

No. 1. General overview of the crippled population in relation to special education and regular education:

Able to relate to and describe:

a. Educational issues–current, historical, and future
b. Administrative placement of programs
c. Interrelatedness of all education efforts
d. Uniqueness of special education processes
e. Changing population of the crippled and other health impaired

No. 2. Orientation to all handicapping conditions:

a. Introduction to all exceptionalities

Freshman Practicum – Observation

No. 3. Continuing curriculum and environmental control, establishing:

a. Goals for crippled and other health impaired populations
b. Creating learning environment
c. Curriculum modifications
d. Relationship to learning theory
e. Comparison and contrasts
f. Design of individualized instruction
g. Ecology
h. Curriculum as it reflects society and as a catalyst for change.

No. 4. Ability to analyze and evaluate functional anatomy and kinesiology as they relate to crippled and other health impaired individuals

a. Neuro-muscular development
b. Consequences of impairment
c. Body movement and control
d. Use of body in learning
e. Prosthesis and orthotics

Sophomore Practicum – Semi-participation

No. 5. Ability to interpret physical, intellectural, emotional, social, and adult implication of handicapping conditions

a. Nature and needs of a crippled population
b. Perception and its relationship to learning
c. Body image and learning
d. Self concept and learning
e. Introduction to the world of work
f. Self-analysis and its relationships (social limitations)
g. Introduction to work/study habits
h. Use of leisure time as it relates to handicapping conditions

No. 6. Proficiency in methodology through exemplary team teaching

a. Academic skills
b. Music
c. Art
d. Linguistic–communication
e. Physical education
f. Activities of daily living
g. Problem solving skills
h. Driver education
i. Vocational skills
j. Recording changes in pupil performance through assessment and evaluation

k. Adaptive materials and equipment

No. 7. Ability to interpret role of the educator of crippled and other health impaired populations

a. Team membership and roles
b. Relationship to classroom activities
c. How to initiate action and plan mutual goals
d. Group processes
e. Leadership of educator of crippled children in team relationship

Junior Year Practicum – Regular Class Teaching

No. 6. Methodology (continued) in Senior year

No. 8. Awareness and utilization of resources of the community

a. Identifying resources and key personnel
b. Locating service areas
c. Obtaining appropriate services
d. Understanding the functions of the community agencies
e. Services for the crippled and other health impaired
f. Ability to differentiate functions of federal, state, local, private, philanthropic, religious, and other services
g. Communication with other professions and disciplines

No. 9. Development of skills in counseling and consultative techniques

a. With parents
b. With children
c. With other professional workers
d. With adults who are disabled
e. With neighborhood persons
f. With other staff
g. For integration

Senior Year Practicum With Crippled and Health Impaired Children

FIRST YEAR TEACHING: Demonstrate ability to evaluate self as an effective teacher and teacher training program in retrospect.

Strengthen areas of weakness through advisement and in-service training.

POST-MASTERS STUDY

Doctoral study and the training of leadership personnel were seen as essentially fulfilling the same goals: providing teacher educators, supervisors, administrators, and researchers who will be able to work

effectively in improving the education of exceptional children. The concept of advanced degrees requires realistic institutional (*i.e.*, colleges and universities) commitment and research facilities to support doctoral programs.

Repeatedly expressed was the need for student options early in the training program and the exploration of alternative models for professional graduate experiences. Several models emerged from the Institute discussions; each stressed theoretical knowledge and practice, including relevant research. While doctoral program emphasis is now on research, participants indicated that this focus may not be sufficient preparation for teacher educators, administrators, or supervisors. Teaching was seen as both an art and a science. Thus, the doctoral program should reflect this combined approach.

There appeared to be core competencies applicable to the training of all leadership personnel. Further specialization areas were delineated, each to be accompanied by supervised field experiences.

The following reflects the Institute's general recommendations regarding career goal oriented doctoral study:

Core competencies for all students

Knowledge and skill related to:

- human growth and child development
- learning theory
- related areas (psychology, sociology, anthropology)
- concepts of test development and interpretation
- formulation of objectives in behavioral terms
- self-analysis in terms of job objectives

College teaching core

Knowledge of and skill in:

- coordination of responsibility in several areas of special education
- psycho-educational assessment
- development of specific competency based training programs
- student advisement
- college teaching and in-service education

Research core

Knowledge of and skill in:

- research design and statistical methodology
- translation of research results for meaningful instructional implementation
- employing computer technology

Administrative core

Knowledge of and skill in:

personnel selection, management, and evaluation
use of organizational schemata
school plant and equipment selection and management
fiscal planning–budgeting and funding
population projections and regional programming
applying school law
instituting legistlative change
working with boards of education, trustees, and city councils

Supervision

Knowledge of and skill in:

modes and methods of curriculum
modification and use of instructional strategies
methods of evaluation
determining and managing classroom grouping
scheduling (including ancillary services)
using feedback from teachers and other personnel

PROBLEMS	*ISSUES*
Organization and administration	What are the purposes and directions of post-masters programs?
	How can individualized differentiated programs be arranged in terms of broadly stated vocational goals and job entry skills?
	What academic fields of study should be included in a doctoral program?
Program flexibility	Are doctoral programs too rigidly structured?
	What are possible alternatives for dissertations (*e.g.*, might doctoral students be given situations in which they can *demonstrate* competence they will need upon graduation)?
	How can programs be designed so that students have an intimate role in deciding the sequence of courses and experiences in their doctoral programs?

	What are the nature and purpose of a full-time residency?
Field experience	How can students be assured academic and field experiences based upon their backgrounds, experiences, and career objectives?
	To what extent do research-directed students need actual instructional experiences with handicapped children?
	What opportunities should be available for doctoral candidate participation in on-going research, demonstration, or field projects?
	How effective are options made available early in pre-service training in enabling the student to determine his professional goals?
	To what extent do students benefit from meaningful involvement in the field with responsibility in decision-making activities?

RESEARCH

The future of research in this field and how it can best serve physically disabled populations hinges on the status of research and its relevancy to present and future movement in the field. Questions and concerns related to funding patterns of both the United States Office of Education and private foundations were focused on both the levels of funding and the scope of funded projects.

Concern was primarily directed toward relevancy of funded projects. It was felt that a) research in the field does not have immediate applicability to the educational situation, b) it is not adequately concerned with prevention of learning problems, and c) it appears to be too restricted, not lending itself to programmatic study.

Systematic scientific research which would help teachers better understand the crippled and health impaired and would provide indications of the efficacy of present work in the field might best be accomplished within the framework of a comprehensive facility for research in special education. It was suggested that a research facility

for special education, based on the concept of the National Science Foundation, would attract career researchers, would provide special educators with help in designing studies, and would make possible the avilability of research populations. Problems unique to special education, particularly crippled and other health impaired populations, could probably best be translated into scientific programming by coupling skilled researchers and experienced and insightful special educators.

Research and demonstration projects are needed to determine the effectiveness of alternative approaches to educational problems. In addition to evaluating specific programs, reference was made to the need to devise new instruments for assessment of both the individual's status and progress as well as the effectiveness of the various educational program models. In order to facilitate accountability, measures related to student's employability, degree of independence, and academic progress are needed. In general, areas identified for detailed and long term research included: 1) educational, psychological, medical, sensory, and specific learning problems that these populations present; 2) a comprehensive follow-up study of these individuals on a number of variables including physical condition, by location (*e.g.*, urban, suburban), and by class placement.

PROBLEMS	*ISSUES*
Interdisciplinary functions	What are the advantages and disadvantages of "team approaches?"
	What is the educational role(s) of non-educational personnel including the pediatrician, speech therapist, psychologist, occupational therapist, physical therapist, and others?
	When and under what circumstances do the various professional workers perform specific tasks, many of which appear to be overlapping?
	To what extent should the personnel on the interdisciplinary team change as the age of the physically disabled student changes (*e.g.*, physical therapy is replaced by occupation therapy for the teenager)?
	What is the educator's role in work-

	ing with infants and pre-schoolers?
	In a hospital setting, how can the educator best participate with other disciplines to evaluate children over long periods of time?–to provide an optimal education service for short-term patients?
	What have related fields such as kinesiology and medicine contributed that should form part of the educational base? How are they applicable to the education of crippled individuals?
	Who is most effective as the coordinator of an interdisciplinary team, and under what conditions?
Organization and administration	What are the factors in centralized and decentralized budgets related to the crippled and other handicapped populations?
	What has been the effect of "soft money" (outside funding) on short and long term program development?
	What factors are relevant to the effective management concept of college and university departments of special education in terms of selection of faculty, tenure, fiscal responsibility, and certification?
	How can organizational and management charts be built from the local level through the state and national levels? Can a taxonomy of comparative administrative practices (state, school district, university, and federal levels) be developed?
	What factors are most critical in developing and implementing teacher certification standards?
	How can an effective administrative and organization schema be designed to assure a continuing, comprehen-

	sive, and sequential program for all crippled and other health impaired populations?
	What is the optimum base for strategic placement of special education facilities in urban areas? In rural communities? In suburban settings?
	What kinds of incentives will bring about school district cooperative use of ancillary personnel including resource teachers, psychologists, and social workers when numbers of handicapped children are small?
Educational planning and programming	Which severely disabled children perform best in special schools? Which will fare well in a regular community school?
	What is (are) the best means of serving the gifted severely disabled?
	Compared to traditional arrangements, how effective is the open school concept for crippled and other health impaired populations?
	To what extent have crippled and other health impaired children been successfully programmed educationally? What factors operate in successful programming?
	In what areas do glaring educational gaps occur?
	In what ways do teaching-learning styles for the crippled child who has attended school differ from the styles of the one who has always been confined to home or hospital?
	How is optimum educational placement determined?
	What arrangements best provide opportunities to explore, in depth, the question of liability in terms of non-traditional (or traditional) approaches to educational intervention for crippled and other health impaired children?

Integration	How can change in attitudes of teachers, administrators and the general public toward the "acceptability" and natural inclusion of this population be effected?
	How valid is (are) the replication of integration studies in other special education areas and on other "minority" populations?
	To what extent might satellite special classes adjacent to regular classrooms provide an effective avenue for normal experiences for crippled and other health impaired children? Do such arrangements sensitize administrators, teachers and regular class children, and lead toward positive attitudes?
	How effective is mandated "equal opportunity" for all children in a school district?
	How can the norm for acceptable behavior be broadened to include more crippled and health impaired individuals?
	To what extent and under what circumstances have crippled populations participated successfully with their non-disabled peers?
The teacher	Which aspects of teacher personality affect successful placement of these populations? In what ways?
	How can the effectiveness of new approaches to teacher training be compared with more conventional techniques?
	Is differentiation of teaching functions in various settings such as the hospital, the residential facility, and the special day school justified? If so, in what ways do they differ?
	Can desired personal characteristics and teaching competencies be

	developed through a training program?
	How can the role of the regular preschool teacher be substantially altered so that his training will make him more capable of identifying "atypical" children?
	To what extent and in what capacities do cooperative or master teachers serve as role models?
Program efficacy	How many crippled and other health impaired children are presently enrolled in programs designed to deal with their physical, educational, and related problems?
	What vocational options are available to these populations? In what areas are they presently successfully employed?
	Is arbitrary school promotion and/or passing through a graded program an educationally effective procedure? How is academic achievement related to adult adjustment?
	To what extent, and how, do sociological, political, economic, and budgetary factors dictate the philosophy of education in this area?

RECOMMENDATIONS TO UNITED STATES OFFICE OF EDUCATION

The Institute participants were given the mandate of making specific recommendations to the United States Office of Education. It was anticipated that the Office will pay careful attention to the recommendations made by the group. Indicating that reform was long overdue and that this area of specialization was in desperate need of new ideas and innovations, the Institute was charged with responsibility to suggest reforms in whatever directions the participants felt were necessary.

The U.S. Office of Education and the University

The participants of the Institute were almost unanimous in their insistence that USOE funding to local universities and colleges remain at least at its present level. Although the present funding pattern of supporting traineeships in categorical areas was accepted, there was considerable discussion of block and cross-categorical grants to universities and colleges. While providing a base upon which each university could build its program, USOE was mandated to take into consideration individual, regional, and university differences. USOE would be charged with evaluative responbility to assess each program as it fills its expressed needs for its service area. It is deemed important that USOE recognize regional differences especially when evaluating proposals for funding. The ecology of the university determines its versatility and dictates its curriculum. By making the criteria negotiable, emphasising the uniquenesses of each, the university situation can be considered on an individualized basis. With a more liberal and extensive understanding of graduate curricula as determined by the applying university USOE would be in the position of discussing individually outlined administrative and programmatic factors that would be especially pertinent to the qualifying university.

It is strongly urged that USOE examine its method of funding. Does, for example, the present funding pattern to universities encourage "local area brain drain?" Several participants felt that block grants to local regions was a poor funding pattern but it was seen as the only method of working through the local area talent drain.

There were recommendations that USOE sponsor visiting scholar programs whereby government personnel or other designated leaders would visit local universities for leadership training programs. While serving as exchange personnel at the various universities, USOE staff and consultants would be in position to assess program operations and make suggestions to strengthen that program. USOE efforts in in-service training might be directed toward regular classroom teachers or ancillary personnel in the educational management of crippled and other health imparied populations as well as to personnel assigned full time in the special areas. The visiting specialists might bring to the training sessions or university settings clear-cut ideas related to funding criteria.

USOE would benefit from encouraging universities, state departments of education, and teachers to project their future needs for training, facilities and programs. Such a nationwide effort would allow

USOE to plan for the future, to be in a better position to award block grants, and to have a picture of the field for an extended period of time. It would aid in compiling descriptive abstracts of current and future operating programs (funded or non-funded) in the education of crippled and other health impaired groups. These abstracts as well as resumés of recent research in the field should be made available to institutions working with or engaged in the training of personnel in this area. The present diffuse nature of such information makes it difficult to see the field in perspective. Financial incentives should be given to teacher education institutions and individuals who express a willingness to experiment with innovative approaches to teacher education.

Doctoral fellowships in special education should be awarded without categorical stipulations. USOE should foster students' self direction and in-depth study after they have satisfied the basic core requirements. It would allow for more flexible programming. It is recommended also that doctoral programs in special education be broadly based on a knowledge of special education. USOE might consider supporting a doctorate in special education with sub-specialties in one or more areas, such as research, mental retardation, visually handicapped, administration, crippled. The support field will undoubtedly determine the direction of the doctoral dissertation as well as in-depth study.

Follow-up of masters and doctoral fellowships to determine where and in what capacity former fellows are functioning must be an integral part of the USOE-university marriage. Universities and USOE need to be aware of what the fellowship recipients eventually do as a base for future funding as well as for a cost analysis study and measure of accountability. Rather than have USOE relinquish its leadership role in the education of the crippled and other health impaired, most participants would encourage a more active role as USOE and the university strive to create a more viable field.

The U.S. Office of Education and State and Local Education Agencies

Many of the ideas and suggestions centering on the cooperative efforts of USOE and state and local agencies were concerned with certification procedures and the need for legislative packages to include census and descriptive listings of available services facilities for crippled and other health impaired individuals.

USOE ought to be aware of teacher certification requirements across the nation and participate in achieving minimum teacher certification that would be reciprocal from state to state. Teacher mobility has made the above a necessary facet of the university-state certification process.

Working together, the agencies can produce descriptive abstracts of current operating programs in personnel training. This listing should be as complete as possible, including programs not currently receiving government funding. It was felt that USOE was in an optimum position to collect and disseminate such information.

USOE might consider setting up national guidelines for enacting state legislation making it mandatory, for example in the building of public school facilities, to provide structural features conducive to access to and use by physically handicapped and other health impaired individuals at all levels of education.

All physically handicapped and health impaired persons must have available under public expenses, through educational or other agencies, the personnel needed for adequate medical, social, emotional, and educational diagnosis and assessment. It was also suggested that all states consider enacting mandatory legislation for early and comprehensive education of crippled and other health impaired children. It was suggested that USOE take leadership in working for lower age admittance to public school classes.

USOE needs to encourage state and local agencies to work closely with local vocational education, employment services, and vocational rehabilitation programs. These agencies and programs need to be brought together to cooperate in personnel training as well as in service to clients.

State-wide and regional meetings of classroom teachers, administrators and teacher-training personnel working with the physically impaired should be planned periodically to disseminate information and to coordinate planning efforts. Along with the aforementioned, summer workshops for teachers and mini-workshops on regional or local area problems cannot usually be organized without USOE support. USOE, together with the state and local education agencies, can assist by examining state funding patterns. Concern was expressed that state funding patterns have been responsible for undue encouragement of private school attendance while discouraging public assumption of responsibility.

a. Mobile labs that would bring diagnostic services and materials to colleges and universities and to local areas. These labs might serve as training centers for certain student teacher activities, *e.g.*, driver education, as well as centers for training professional and paraprofessional personnel.

b. Descriptive and training films similar to the George Washington University productions on special education for the deaf and the mentally retarded should be developed for the area of the crippled.

c. Research and demonstration of devices and training personnel for homebound and hospitalized children should be instituted through USOE. Assumption of the cost of the various telephone home-school hookups might be considered as a parallel to the captioned films or talking book programs. There might be a program for the crippled modeled after the American Printing House for the Blind.

d. There is a specific need for the Instructional Materials Centers Network to take a more active role in the research and dissemination of material and curriculum suitable for the crippled and health impaired populations.

Monitoring trends, encouraging research in the field, working for a more comprehensive program at the local and state level, generating ideas and research grants, offering guidance and monies for willing and able field personnel—these are requests made to USOE.

The U.S. Office of Education Leadership Role

More research on special education teacher training techniques and methods is of prime importance. As one of their functions, USOE personnel can review the efforts made to implement research findings in actual instructional settings.

A one or two year program might serve as a means of evaluating the realism of recommendations. There appears to be need for built-in research so that on-going programs can be operated more dynamically. Action oriented and specifically applied research was seen to have special merit.

In several instances the participants of the Institute asked for direct intervention and leadership from USOE. Specific reference was made to the need for a current handbook on the laws and rights affecting the crippled and other health impaired populations. A survey of the actual needs of their teachers, supervisors and administrators was thought to be a worthwhile endeavor. The institution of a national census of the crippled and other health impaired was considered favorably. It was generally felt that a central Bureau listing would help to guarantee the atypical population exposure which could bring about services and alleviate the "losing" and neglect of so many of the physically disabled.

The participants expressed a strong desire for more national conferences either as a follow-up to this particular one or on other relevant topics. A follow-up meeting could focus on one or more of the issues raised at the present conference.

A continuing study group–possibly a National Institute–would offer this area of special education the opportunity to build on the learnings and insights developed as well as the questions and issues raised. Follow-up at local and national meetings was recommended. One of the mandates of this Institute would be to foster a more positive working relationship between USOE's program for crippled children and vocational rehabilitation. Too much work that should be done by both areas working together is now being done separately; too much of the work is duplication, and too many program gaps continue to exist. In some instances, these gaps appear to be fostered by the special education leadership.

USOE funding and support are prerequisites to any of the suggestions and recommendations listed below. While not excluding the personnel involvement and local support that would be expected, the following considerations are almost entirely dependent on USOE funds.

CHAPTER IV
Summary and Conclusions

The special study Institute was the work of about 100 individuals, each with a commitment to improving the education of crippled and other health impaired persons. The clearest conclusion is that paradoxes abound and further study of the situation is critical. The following are but a few of the issues highlighted by the participants.

While the profession desires to decrease classification and increase orientation toward student functioning and learning, the socio-economic political picture often demands structured labels.

Differential placement, which should be flexible in terms of age, needs, and time, is often used for the purpose of exclusion and finite placement.

Erasing categories may assist parents in terms of immediate problems concerning their child; however, this lack of specification may be an "educational cop-out" postponing realistic evaluation.

An apparent anti-intellectual approach with criticism of professors and colleagues obtains while demands for more services and account-ability from these professionals are increasing.

Exclusive focus on an individualized approach to the education of the physically disabled may further penalize the child who, by the nature of his handicap, needs the stimulus of the group process.

State funding patterns appear to foster public education's abdication of direct service responsibility for severely and multiply disabled individuals.

Diverse problems of the special education group presently called "crippled and other health impaired" would seem to highlight the discrete categories' inappropriateness. Consideration of the populations as multiply handicapped would, or could, be followed by more adequate educational placement and planning.

The following summary statements are comprehensive. They were prepared by participants for presentation to the members of the

Division on the Education of Physically Handicapped, Homebound, and Hospitalized of the Council for Exceptional Children at the international convention held in Miami Beach in April 1971. The papers formed a four part sequence dealing with the child and his education (Wald), teacher preparation (Mullins), post-masters study (Espeseth) and research (Rusalem).

CRIPPLED AND OTHER HEALTH IMPAIRED AND THEIR EDUCATION

Report of the West Point Institute

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There was consensus among the West Point conferees that significant changes in the nature of crippled and other health impaired populations have occurred in the past five to ten years. One of the aims of the Institute was to define the area of COHI in terms of the subgroups of children who are and/or will be the target population. Because the COHI population is constantly changing it becomes necessary periodically to assess program needs. Building flexibility into programming will allow educators to meet the needs of a changing population. It will put an end to the current practice of trying to fit the COHI child into existing and sometimes unsuitable programs. Periodic investigation is critically related to modern school planning, classroom organization practices, educational methodology, teacher education curricula and certification standards.

Revolutions in medical treatments have brought about a reduction in chronic illness and crippling conditions resulting from infectious diseases. The incidence of poliomyelitis, osteomyelitis, tuberculosis, and many of the other classical crippling conditions has diminished. Increased social and physical activity have led to an increase in crippling conditions resulting from accident and trauma. Over one half of the children affected are under the age of five. Children of the drug society and those affected by the "battered child" syndrome are examples of the changing population. Participants agreed that for the most part, children who are now receiving services are more severely involved youngsters than those attending special education programs even a few years ago. They are the children with complex hereditary, congenital or traumatic disorders that present more demanding education needs.

These children manifest multi-sensory deficiencies, perceptual inadequacies, communication barriers, social and emotional complexities, and retarded intellectual ability. COHI has become a multiply disabled population.

While a preferred definition did not emerge from the Institute's deliberations, a number of factors and combinations of variables were suggested as requirements for describing the children. Most significant was not the distinction of these variables but rather the interrelationships that exist among them. The implication is that the COHI population is representative of many problems and that a concern with identifying a primary physical or medical impairment may be restrictive to future educational planning.

From responses to a pre-institute questionnaire, the following composite definition emerged:

> The COHI population appears to be seen in three dimensions; physical definition, functional problems, and programmatic modifications. The population is comprised of those children and adults who as a result of permanent, temporary or intermittent medical disabilities require modifications in curriculum and instructional strategies. Frequent separation from family and a lack of adequate parental guidance contribute to secondary emotional problems of the COHI population. The child's physical limitations are often the basis of functional retardation as well as sensory perceptual and conceptual deficits. The development of realistic expectation levels requires the identification of additional and unique instructional materials, equipment, and strategies for evaluation.

COHI is a comprehensive category encompassing many educationally divergent children. School placement has generally been medically homogeneous with little attention given to diversity in terms of chronological age, mental age, level of achievement, level of social and emotional development, and ability to communicate. The growth and establishment of new teaching methodologies have made evident the need for redefinition of COHI in terms of educational approaches that may be most appropriate to each of these children. The range and kind of impairments involve a multitude of bodily structures and the disease complexes that affect them. The educational implications of crippling conditions are also multiple in origin. Research in terms of the educational consequences of physical impairment has been meager. The question of the education process in relationship to disability should receive attention as a critical issue.

Some COHI children have rather circumscribed problems which can be lived with in a relatively normal fashion while others are so deviant that goals for them must be very different. Modifications of the program and special services will vary depending upon the child's needs and educational progress. For this reason the special education teacher should play a central role in determining educational placement and program for the COHI child. An educationally relevant definition of COHI populations places each child on an educational-diagnostic-

learning continuum. Curriculum provisions should be made for 1) children who should proceed immediately to the regular school program, 2) children whose handicaps preclude placement in a regular program at this time, and 3) children whose handicaps preclude placement in a special class at this time and 4) children whose handicaps preclude independent functioning.

A large proportion of the traditional COHI population can and should be made part of the regular classes. Not requiring specific accommodations, they can profit from virtually any well designed program, responding to usual methods and materials. There is little need for adapting curricula and/or methods for teaching a child when the disability is purely medical and there are no secondary educational handicaps. Included in this group may be accident victims and those with short term illnesses. This group is composed of children with mild, moderate, or severe physical involvements who can learn in a normal manner. For them the educational program itself necessitates little if any unique educational interventions. Even for those who are at home or in the hospital, special education may be no more than regular education in a special setting.

With many physically handicapped children the use of special provisions (*e.g.*, electric typewriter, standing table) can successfully eliminate the need for special class placement. For these children, restrictions imposed by architectural barriers and special transportation needs too often limit opportunities for proper educational placement. Many of the problems faced by this subgroup of COHI youngsters appear to reflect difficulties inherent in administrative planning rather than in educational programs.

While Institute participants urged work toward placement in regular classes (with supportive services when necessary) they recognized a group of COHI children, with multiple disabilities, requiring either short or long term placement in a special program. This is the group of children, with not only physical impairment but also with concomitant educational handicaps, who demonstrate a need for specific instructional programs to achieve competency in academic or social skills. Participants were keenly aware that these are the children with crippling and other health handicaps who show the effects of restricted social, cultural, and general interactional experiences. The average child, by the time he has reached kindergarten age, has learned to perceive and appreciate the physical relationships and personal implications of his environment. Inability to move limits or precludes early exploration and sensory experimentation. Defects in communication impair personal expression and difficulty in forming lasting social relationships result in limited emotional development.

The COHI child approaches school age as an academic retardate because of the experiential deficit in those areas upon which primary education is based. Between the ages of 1-3 years, there occur three

major stages of development: the ability to locomote, the ability to comprehend and use language, and the ability to respond to the imposition of socialization demands. The child with a physical handicap may show developmental lags in one or more of these areas.

As specialized skills develop, the child acquires the ability to receive and process refined visual and accoustical information. The very young child requires a great deal of motor involvement in the interpretation of sensory data. Disturbances in perceptual analysis and perceptual synthesis are commonly noted difficulties of a population that manifests limitations and aberrations of motor functioning. This portion of the COHI population should be able to proceed through the general academic curriculum if the content is taught in a different manner. Overt environment support such as large print, uncluttered pages, color coding, teaching carrels, etc. combine academic training with training in the perceptual areas.

As they grow older, COHI youngsters are deprived of a wide range of everyday experiences which, for the normal child, constitute the foundations of learning. Lack of educational continuity during periods of medical treatment and periods of homebound and hospital teaching contribute to academic retardation and place the COHI child at a disadvantage. Programs should not only take the deprivation into account but try to remedy it. These are the children who may require additional cumulative school time and/or an enriched program in order to proceed through the general academic curriculum.

An additional subgroup of those requiring special education services are those COHI youngsters for whom it is necessary to vary not only the teaching strategies but also the content and focus of the instructional program. For the severely and multiply handicapped populations, the usual vocational and avocational goals may be impossible to attain. It is conceivable that educators, and society as a whole, will need to prepare a contrived and somewhat sheltered but action-oriented environment for their adult living.

Problems that may be faced by all subgroups of COHI children stem from the effects of the child's relationship with himself, his parents and his peers. The emotional and psychological implications of physical disability extend into the development of a concept of self. The inability of the handicapped individual to predict the acceptance of himself as apart from his condition often leads to problems in social development. Secondary difficulties are related to inconsistent parental guidance, numerous separations from the family, and the inability of the COHI child to keep pace with his peers. Overprotected by his parents, the child may develop a lack of self-sufficiency and self-confidence. He may expect to gain acceptance and rewards without earning them.

For a vast majority of COHI children, resultant limitations of physical dexterity, locomotion, and vitality have produced a multiplicity of psychological and intellectual handicaps. As educational

methodology becomes more refined, increased professional competence will allow us to attend to those deviations in sensory, perceptual, and conceptual processes shown by COHI youngsters.

Adjustments needed to satisfy special academic needs imposed by COHI conditions appear to be more easily recognized than those adjustments needed to tend adequately to emotional problems imposed by the same handicap. Research is needed regarding those factors that foster the development of emotional and social maturity in the handicapped youngster.

Focusing on skills that will foster successful entry into the mainstream of education, no strict educational program can be adhered to. Programs have to be redesigned to augment specific deficits. Recognizing that some abilities, skills and knowledges are more important than others for a given child at a given time, special education must accordingly assume the responsibility for making value decisions.

The proper educational objective for each COHI child should be based on how far he can progress in meeting the demands of life. Therefore, the guiding principle for the education process becomes one of devising a school program where each child has the opportunity to work at his own level, in his own preferred way, progressing as far and as fast as his learning characteristics will permit. Whether dealing with the highest or lowest functioning handicapped child, the educator's responsibility is to provide instruction based upon the selection of content to be learned and teaching strategies to be used.

COHI children should be described in terms of what they can do, what they have learned, and under what conditions they can best respond. The educator's energy should be directed toward remediation and compensation regardless of the degree of impairment. Hence, it becomes necessary to describe the child in terms of specific behavioral deficits as well as achievement limitations. Special educators should provide descriptive evaluations of the manner in which the child interacts with his environment: the behavioral consequences of physical impairments.

If a teacher knows a child in terms of specific assets and deficits of perceptual motor, language, and cognitive skills; in terms of the nature of his response to reinforcement; in terms of the relationship between performance and task structure; then this data becomes the basis for making decisions regarding specific educational objectives, educational placement and instructional methods and materials.

At the present time there is increased interest in and concern about programs on the secondary level. Areas of concern include opportunities for attending college as well as services suitable for the non-college bound youngsters. The latter group is further divided into those who will go into competitive employment and those who will not.

Mandatory and permissive legislation has resulted in a younger handicapped population in the schools. It is anticipated that a

concentrated effort in infant and early childhood programs will provide maximum preparation for elementary programs within mainstream education. If efforts in compensating for sensory, social, and academic preparation are successful at the early childhood level it should be possible to reduce the number of special programs needed at the elementary and secondary levels. Working toward this goal, teachers must play the role of trouble shooter; stepping up efforts to develop each child's latent resources–intellectual and social–in order to facilitate successful integration.

Greater educational integration of the disabled youngster was seen as requiring flexible administrative models for easy mobility through a continuum of educational services including infant education, preschool, elementary and secondary schools, vocational training, college preparation, and adult education. In viewing long term goals for the COHI population, intensive specialization should be reserved for those severely and multiply handicapped children for whom it is absolutely essential for educational progress. In general, participant consensus indicated that the objective of special education for the COHI child is to maximize the individual's ability to achieve relative to his own potential and to close the gap between his potential and his level of achievement. This is the gap which so often characterizes the performance of COHI children. As soon as children are able to participate they should be placed into a regular program. When necessary, administrative support should be provided in terms of special materials, equipment, and ancillary therapies. Education, however, should be the responsibility of mainstream educational personnel. Special education can no longer afford to relieve regular education of the responsibility for quality education for the disabled school population.

TEACHER PREPARATION IN COHI

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The Special Study Institute in the Area of COHI

The Special Study Institute on Current Concerns in Training of Teachers and Other Professional Educators of Crippled Children

provided for intensive communication among the over 80 participants representing universities, colleges, government agencies, schools, and institutions throughout the country. The pre-Institute questionnaire also served as the organizing format of the eight discussion groups, which remained intact and met twice a day for three days. During this time, participants concerned themselves with aspects of their professional responsibilities literally all of their waking hours. Such an experience in one sense was a highly personal one resulting in learning, change of attitude, and of professional growth in the stimulating atmosphere of deep commitment to the field, honest and profound differences of opinions and emphases, and the pervading spirit of respect and helpfulness of one's colleagues which Dr. Connor and her associates so successfully encouraged.

It is difficult to assess to what extent one's own perceptions are actually representative of the group and I am sure the editing committee has shared that same concern in its gargantuan task of abstracting the many outcomes of the conference. Having expressed the reservation that I may have misrepresented or misread the consensus on some items, this paper is an attempt to relate the conclusions of the participants on policy to their conclusions on aspects of teacher training programs in the area.

Identification of the Population

Dr. Wyatt consigned the group to reexamine the rationale for the COHI area and seriously to question its organization and mode of operation.

The participants seemed of overwhelming consensus on the following point: a group of children in deep need of services are rather exclusively entrusted to professionals operating under the rubric COHI. Whereas there is disagreement on nomenclature, optimum organization, and method of dispensing services, there is emphatic commitment to these children and a determination that their needs not be forgotten in the event of re-allocations and reorganizations. It is of utmost importance for educators to assure that COHI children have educational evaluation and services and these can only be supplied by educators. Medical and other paraeducational personnel cannot reasonably be expected to assume these responsibilities, although in the past they have occasionally had to do so by default.

The relation of the affirmation of the integrity of the COHI population to teacher preparation is obvious: teachers must be trained who can serve this population, or these children will be prevented from fulfilling their highest human potential. Under whatever form or nomenclature, COHI teacher preparation must continue.

Information on federal and state funding provided by Dr. Saettler shows a continued government commitment to institutions providing

this preparation. The funding patterns of support are becoming more flexible to allow increasingly for the needs of particular institutions and populations.

The Needs Within the Population

The characteristics of subgroups of the population were carefully considered, as noted by Miss Wald. There was agreement that there is a considerable group of children whose physical problems of deformities do not preclude normalcy in areas of learning. I think there was unanimity of belief in the principle that these children should be in the mainstream of education whenever feasible. "Feasible" in this context does not mean convenient, but, rather, whenever humanly possible.

It was feared by some participants that the above statement implies that special educators should wash their hands of physically limited normal learners. Actually such children provide challenges for special education teacher training programs which have too frequently been ignored.

Whereas mainstream educators have shown reluctance to deal with *COHI children in some cases, special educators have perhaps not shared* with them the knowledge and the ongoing support which could do much to allay fears and smooth integration. Such a dichotomy between special education and mainstream education acts to the detriment of COHI children and probably all exceptional children. Different organizations for instruction were suggested to supplant segregated and isolated self-contained classrooms and schools. These included the establishment of resource rooms in regular schools, special consultants to regular classroom teachers, and flexible flow of children from special to regular classes. For example, teachers and administrators need help in the removal of architectural barriers, setting up rest, medication, and therapy schedules, and adapting prosthetic and orthotic devices for classrooms.

The strong implication for special educators that these normal learning crippled children illustrate is the need for communication, cooperation, and understanding between mainstream education and special education.

At the conference participants considered what could be done at the teacher training level to assure that mainstream and special education teachers understand each other and work together. Various organizations for instruction and practica as well as course contents were suggested.

An example of facilitation of this principle occurred in the School of Education at the University of Pittsburgh. Because of expressed interests of undergraduate education majors a course was developed with focus on the handling of exceptional children in the regular classroom. Students themselves have claimed an entirely new attitude toward exceptional persons as a result of the experience of the course.

Summary and Conclusions

If programming for COHI children is to become more flexible with respect to integration, new kinds of educational specialists must be trained through newly conceived courses, and practica must be developed with close liaison of mainstream and special education for both regular and special education students.

Another important subgroup in the province of COHI is the multiply handicapped child whose physical handicap is often secondary in academic consideration to his perceptual and cognitive problems. The cerebral palsied child is frequently such a multiply handicapped child and perhaps the most challenging of all exceptional children for the educator. Dr. Rosner addressed himself to the learning problem of the child who is defective in visual-motor or auditory integration.

The competencies necessary for teachers who will work with multiply handicapped children are of a wide range and variety. The following list is illustrative rather than exhaustive.

1. Ability to work cooperatively with the rehabilitation team and with parents in the education of the multiply handicapped child.
2. Knowledge of normal growth and development, physical and psychological.
3. Understanding of the psychological and educational implications of various crippling conditions and health impairments.
4. Ability to identify and remediate academic deficiencies and teach to the academic strengths of children with a wide variety of physical, perceptual, sensory, cognitive, and emotional problems.

Since these competencies must assume a broad range of areas, courses, and field experiences, it was felt by some participants that programs for teacher preparation should be individualized on the basis of each student's particular abilities and interests, such as work with children in hospital or homebound settings, work with physically handicapped adolescents or young children, work with multiply handicapped slow learners. Such individualization provides in depth study in specific areas and must be balanced with whatever broad knowledges are deemed necessary to teacher competency for all teachers.

The multiplicity of problems and the great challenges of the complex and varied group of children in the area of COHI have implications for programs of doctoral study. I believe the remarks of Dr. Lord and Dr. Rusalem are consonant with the position that doctoral study should not focus on physical handicap, or any medical classification per se. Rather, advanced students should be concerned with research and development pertinent to the learning and adjustment problems of the population of exceptional children that have been identified.

New Directions of Educational Emphasis

In teaching pupils whose individual differences and competencies are so varied, the well trained COHI teacher should have great exposure to

the new methods and materials which present technology and pedagogy afford.

The participants were able to share with the group innovative programs, such as Dr. Bigge's, involving a systematic presentation for teacher education, and micro-teaching demonstrations such as that of Dr. Berko.

The speakers well illustrated the close relationship needed between academic and field experiences for optimum teacher preparation. Ideas such as extended field experiences during summer months or alternating with school classwork were discussed. Individualized study and the use of examinations for demonstration of competency were suggested as an alternative to class credit hours which most institutions now require.

In general, a great interest was evinced in very early educational intervention with handicapped or high risk children. It was seriously proposed that parent education and counseling might actually begin before birth, such as in the case of a high probability of the transmission of a hereditary condition or a known abnormality of the fetus. It was felt that many secondary but serious psychological and learning problems of the handicapped child reaching school age could have been mitigated or prevented by early educational intervention.

The commitment to early childhood intervention seems to be increasing among institutions of higher learning. The extention of teacher preparation programs in order to serve the very young exceptional child necessitates new competencies and innovative organizations for instruction. For example: 1) the student teacher may have to learn how to adapt to the child's home as his classroom for infant teaching; 2) the teacher may need to develop expertise in teaching parents how to teach their babies, thus be a teacher trainer himself; 3) the student teacher will need to learn ingenuity and flexibility in development of curriculum and methodology in the new and experimental field of early special education.

Much thought was given to the teacher's responsibility in preparing the child for his eventual optimum adjustment in the adult world. Some participants stressed the need, and occasionally the inability, of educators to plan curriculum and undertake instruction that has relevance to realistic life goals to which physically handicapped children can aspire. The implication for teacher training institutions is clear. Teachers will need to develop competencies relating to the provision of educational programs for teenagers that provide background and transition from the school to the world of work. Therefore, a close liaison is recommended between special education, vocational education, and the field of rehabilitation.

Summary and Conclusions

The principles and policies elucidated in the Special Study Institute resulted in the following conclusions for COHI teacher preparation.

Summary and Conclusions

1. Since teachers are needed to serve the educational needs of a very real and difficult group of children, specialized teacher training programs are necessary.
2. The goal of integration of crippled and sick children in mainstream education to the fullest extent suggests the need for new kinds of special educators who can aid schools and communities toward achieving this end more successfully.
3. Teacher training programs should expedite understanding and cooperation between mainstream and special education to the mutual advantage of the fields.
4. The complex problems of the multiply handicapped COHI children might be best met by providing students with individualized programs of special training for in depth experience and training related to the education of COHI children and interests of the teacher's pupils.
5. Programs for doctoral study should not be based on medical classifications but rather on research and development dealing with educational and psychological variables in relation to COHI children.
6. It is incumbent upon teacher training programs to make every effort to adopt innovative methods and materials afforded by modern pedagogy and technology.
7. Since very early intervention is often obligatory for a crippled child's optimum growth and development, educational institutions for teacher preparation should focus on program development in early childhood special education.
8. Teacher preparation programs should afford opportunities for the student to understand his role as a future teacher in relation to his pupils' vocational and rehabilitative needs.

POST-MASTER'S STUDY IN COHI

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The purpose of this paper will be to discuss some of the major practices, issues, problems, and trends in the training of personnel at the post-master's level in the area of the crippled and other health impaired. Specific attention will be given to selective recruitment, focus of study, interdisciplinary training, and promising practices and trends in post-master's programs.

Selective Recruitment

The prime key to a viable, strong post-master's program is the quality of the candidates selected. Selective recruitment must be pursued vigorously by training institutions in order to develop future leaders who can make significant contributions to the field of education.

Characteristics desired of candidates for post-master's study should include attention to the following areas:

1. Candidates' goals: Careful consideration should be given to the prospective candidates' general and specific goals. Are they consistent with needs in the field of COHI; are they consistent with the goals of the training institution; are they consistent with the candidate's current and potential abilities?
2. Academic potential: With the increasing complexity of educational problems and the knowledge explosion it is of increasing importance that post-masters candidates have intellectual capabilities and performances to match the challenge of the field. Possibly, there are no perfect predictors of academic potential at the post-master's level. However, academic performance as an undergraduate and graduate student taken in combination with scores on such tests as the Millers Analogy Test are considered to be fairly high in predictive validity.
3. Experience: The issue of relevant experience prior to beginning a post-master's program frequently brings forth stands ranging from extreme rigidity to extreme flexibility. It is generally accepted that a minimum of two to three years of classroom teaching and/or clinical experience is essential if the candidate plans to become a teacher trainer. The controversy is more likely to revolve around the necessary background experience prerequisite to pursuing a post-master's program when administration and/or research is the primary focus that the candidate has in his professional plans.
4. Age: Maximum age at time of entry into a post-master's program varies frequently depending on the individual institution's philosophy and policy. Considering the time and money investment of both the candidate and institution it appears unsound to accept post-master's candidates who would have less that 25 productive years left upon completion of a doctorate program. With other variables taken into consideration it appears that the age range of 25 to 35 is most advantageous for entering a post-master's program.
5. References: References from previous employers and academic advisors should be considered when evaluating candidates for post-master's programs.
6. Other: Many other considerations should enter into the evaluation of post-master's candidates. These may include personal and professional philosophy, emotional maturity, acceptability of appearance, etc. These may be difficult to evaluate on an objective basis and without superimposing personal biases, mores, and values on other people.

Some major issues must be considered and faced in the professional world of the crippled and other health impaired. These include an adequate representation of minority groups, the need for classroom or clinical experience for individuals pursuing research careers in the area,

equal representation of females in post-master's programs, and planning for the major needs in the field today.

Focus of Post-master's Study

Traditional post-master's programs in general education as well as special education have focused on preparing personnel to serve in roles, singly or in combination, as researchers, administrators or college teachers. Generally speaking the area of CDHI would not have significantly different patterns from the rest of special education as to primary or combined focus of study. The course work, per se, would have major specific differences, but overall goals would be similar.

There are several premises, some of which may not find unanimous agreement in the field of CDHI, that I believe must be underlying assumptions when considering post-master's preparation in the area of CDHI. These are not intended to be all-inclusive but to serve at least as foundations for consideration.

Premise I. *One type of training cannot adequately be attained without due consideration of the other "specializations" and at least a minimum of course work in those "specializations."* More specifically the preparation of administrators with total concentration on administration course work and experiences without developing research foundations would provide an immensely inadequate preparation in today's advancing technology of education. It is also of equal importance that researchers have enough breadth of training and exposure to permit them to see beyond the walls of their cubicle.

Premise II. Premise one strongly suggests, therefore, that a common core of training and experiences be part of all post-master's programs in CDHI with the concurrent or subsequent opportunity for the candidate to specialize in research, administration and/or college teaching.

Premise III. Because of the changing nature of job markets and because of the possibility of change in an individual's professional goals, interests, and capabilities it appears advisable for post-master's candidates to have a minimum of two prime areas of study:

a. College teaching - Research
b. Administration - College teaching
c. Research - Administration

Premise IV. There is not a sufficient body of knowledge in the area of education of CDHI to make it possible to have a doctoral program based solely on a CDHI orientation. The demands of the field and the continued trend toward a multi-handicapped approach to CDHI make it mandatory that studies in other areas of special education be included in the post-master's program.

Premise V. Dependent on the primary professional goal of the post-masters candidate, the prerequisite experiences of the candidate may differ. There appears to be substantial agreement that one to three years of classroom teaching or clinical experience should be a prerequisite to being trained as a college teacher and perhaps even more experience should be a prerequisite for training as an

administrator. However, the concept that potential researchers in the area of COHI need classroom teaching experience prior to post-master's study appears to be at least one reason why there is such a dearth of research in this area. Until we begin vigorously to recruit bright young men and women capable of becoming researchers in the area of COHI the research drought is likely to continue.

Contributions made to other fields of special education, by men such as Kirk, Heber, and Lilly with a minimum of actual direct classroom teaching experience, cannot be ignored. If the field of COHI had more men and women of their stature it would be a more vibrant area.

Premise VI. Post-master's training programs in COHI need a strong, extended practicum and relevant experience as a part of a total program. This implies the need for continued development of practicum and intern experiences for those proposing to enter the profession of college teaching and/or administration. For potential researchers the opportunity to associate with ongoing research projects is of prime importance.

Integration of Studies From Other Disciplines

Because of the physical nature of the COHI population's disabilities, it appears to be of prime importance that post-master's candidates in this area need to have, at the minimum, basic understandings of the neurological, physiological, and anatomical bases of development and behavior. This should not be interpreted as a position in favor of a strictly medical model but rather that considerable emphasis be placed on medically oriented training. The greatest emphasis, of course, should be placed on educationally relevant experiences that will best prepare individuals to cope with the psychological and educational demands of the field.

It is frequently observed that some students, today, come to post-master's study with minimum and/or inadequate backgrounds in psychological foundations. This may be a function, at least in part, of the rapid growth of special education courses available in colleges and universities over the past ten years. Although the growth of course work in special education has been basically a healthy trend, it is of considerable importance that we do not neglect the basic psychological foundations such as learning, development, motivation, personality, etc. If a candidate enters post-master's course work without solid foundation course work in his previous training it is necessary to include it at the post-master's level.

The knowledge explosion in areas of general education is becoming increasingly more apparent. This, together with a continuing trend towards more and more integration of handicapped children into regular classrooms provides particular impetus for special educators to be continuously aware of current trends in regular education. New developments in such areas as administration, physical education, recreation, and elementary education need to be closely examined and considered for interweaving into special education programs.

Practices and Trends in Post-master's Programs in COHI

There are several practices and trends in post-master's education that appear promising. Certain of these may be short-lived and others may well have profound effect on future training programs. The following is a brief list of what are considered to be a few of the more promising trends.

1. A continuous demand for and implementation of more relevant programs.
2. Recognition of the multidisciplinary approach to diagnosis, prescription, and education of the COHI children.
3. The increasing recognition of the need for a greater psycho-educational emphasis in training programs without totally abandoning the medical models.
4. The de-emphasis of categorical approaches to labelling children and an increased emphasis on the recognition of the multiplicity of handicaps found in populations of COHI children.
5. The emphasis on developing broadly based diagnostic-prescriptive specialists who have expertise not only in the area of COHI but also in areas of retardation and learning disabilities.
6. Hopefully, an increase in educationally relevant research to give a greater depth of understanding of children who are in the COHI population.
7. An increasing emphasis on applied, practical experiences for post-masters candidates in COHI that will better prepare them for subsequent, actual job requirements and demands.
8. A greater emphasis on in-service training needs which may significantly alter the previous training methods with heavy pre-service orientation.

THE FUTURE OF COHI AS VIEWED IN A RESEARCH FRAME OF REFERENCE

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Participants in the West Point Conference repeatedly observed that the future of the field of service to the crippled and other health impaired as a viable area in special education hangs in the balance. Compelling problems in recruitment, administration and supervision,

interprofessional relationships, and teacher education were presented at some length, suggesting that positive steps are needed to restructure COHI so that it will become more responsive to the needs of exceptional children and those who serve them. In addition to the functional areas noted above, research has an input to offer in relation to the current and future status of COHI, one which may point to new directions in which this field should proceed.

In general, the well-being of a professional field is reflected in the flow and quality of its research. In order to maximize the usefulness of a profession to its target population, it must maintain a dynamic research establishment which feeds new and relevant knowledge to the practitioners. Through applying selected findings to practical instructional problems, the practitioner achieves a higher probability of success in implementing his educational interventions in the school situation. In time, we hope, science will replace hunch and educators will increasingly rely upon data rather than intuition. Thus, research activity in COHI can be viewed as a rough measure of its progress toward professional excellence.

Some informal indicators are available which shed light on the current status of research on the education of crippled and other health impaired:

1. A recent review of research materials conducted by Connor and Rusalem for a chapter on the physically limited to be published in a standard reference-text dealing with the psychology of exceptional children and youth resulted in the identification of only a handful of sound and meaningful studies. Most of the material examined in this area was personal and descriptive, not experimental. Indeed, few of the items addressed themselves to vital issues in this field, electing, instead, to describe local experiences with little reference to theory or concepts.

2. A cursory survey was conducted of articles published in *Exceptional Children* during 1970. Of 75 signed papers appearing in the pages of this journal, only two (2.7%) could be described as being remotely related to COHI, the crippled and other health impaired; both of these were on cerebral palsy. Although each was research-oriented, the design was relatively simplistic and obvious.

3. Most of the educational practices in this area are based upon factors unrelated to research—teacher predilection, intuition, unsubstantiated authority, or unwarranted transfer from general education. Much of educational practice is little more than an ad hoc adaptation of general education. And, even if the teacher of the crippled wanted something more relevant to his group, the literature would offer little assistance.

During the five years in which Teachers College conducted its June Research Institute for College Faculty Members in Special Education, 120 professors and instructors enrolled. Only one of these participants was a specialist in the area of the crippled. Without access to further facts, one could well hypothesize that this phenomenon reveals a general lack of interest and involvement in research on the part of these

specialists. As confirmation of this finding, the number of doctoral dissertations in the field was found to be very small and few of those that have appeared are outstanding.

A number of factors seem to play a part in the apparent apathy and disengagement of educators of the physically handicapped from the research area:

1. The field seems to have relatively low status in the special education hierarchy and is not attracting its share of graduate students who may, in time, become the researchers in this area.
2. As repeatedly noted at the West Point Conference, problems of definition and population variability are increasingly troublesome. Until the target population is clearly specified, uncertainty about boundaries will continue to restrict investigators with interest in the physically handicapped. Much of the effort in defining COHI has focused upon disability nomenclature and classification, a dubious basis indeed, for definition in this field.
3. The crippled and health impaired, as a specialty, is somewhat out-of-fashion. Special education has seen disability entities rise and fall in popularity and public support over the years. Mental retardation seems to have had its day; learning disabilities now hold the spotlight. But the education of the crippled is something of a forgotten field at the moment, a fact that leads some special educators to suggest that it should ally itself with, or be absorbed by, the learning disabilities or some other one group. Just as sick corporations are prey for takeovers by conglomerates, this field currently is a sitting duck for envelopment by another area, a fact that is not likely to revitalize research.
4. Some special educators view the target population of the crippled and health impaired as a transitory group whose disabilities are only temporarily educationally significant. In this context, special education for these children is considered necessary only until mechanical first aid arrives—that is, some mobile or electronic means of delivering educational services to them. As far as these special educators are concerned, crippled and health impaired children are just like other children except for their physical separation from regular instructional settings. Thus, they need no long-term differentiated educational assistance: just a transitional service that requires no special skill. Such a view, of course, ignores the long-term effects upon learning and behavior of traumatic experiences, atypical living environments, and prolonged experience deprivation. Whatever else it produces, the presumption of "no difference" sharply limits the attraction of this field for research workers.
5. The current thrust toward enrolling all exceptional children in regular classes seems to special educators especially pertinent for the physically disabled groups since, presumably, the conditions that disable them may have little effect on fundamental learning processes. Yet, there is mounting evidence that the disabilities suffered by many crippled and health impaired children do influence learning and do mandate some special interventions that cannot always be managed in regular class settings. Yet, so long as it is believed that educational whim, and not learning and behavior problems, keep these children out of the educational mainstream, researchers are likely to find little of interest to investigate in the group.

The confluence of all of these influences at this point in the development of special education suggests that it is time for a change in

the education of the physically disabled. Perhaps research has something to offer concerning the direction in which this change should occur. A series of investigations conducted at Teachers College suggests that a preferred alternative to the current disability focus is a COHI field that concerns itself with the impact of educational setting on children rather than with disability labels. Historically, the field has defined itself in accordance with a list of disabilites that crippled children or otherwise impair their health with the assumption that it is these health conditions that shape the child's learning.

Evidence emerging from Teachers College and elsewhere points in a different direction. This evidence suggests that some children with the same or even more severe limitations as those in special classes are attending regular classes. Thus, it is possible for a child to be on home instruction with the same physical problems as another who is attending his community school. Apparently the disability per se is not the deciding factor. Therefore, the work being done at Teachers College suggests that the core of COHI probably lies more centrally in the atypical setting in which handicapped children are required to function than in their physical conditions.

As the concept is being developed, important clues to the COHI dilemma have been found in studies of human ecology, such as the "territorial imperative" and the pioneering work in ecological psychology. Essentially, those who advocate this approach argue that atypical environments evoke atypical responses. In time, such atypical responses become important components in the learning problems of disabled children and reinforce ineffectual behaviors. Viewed in an ecological frame of reference, COHI could become an environmentally-based educational science about which fascinating questions can be asked:

1. How does enforced confinement to an atypical environment such as a hospital, a home, or an institution, influence cognitive, intellectual, and social development?
2. What is the relationship between the duration of an experience in an atypical environment and the development of the child in accordance with his potential?
3. If deleterious effects do occur as a result of living and learning in an atypical environment, how long do such effects persist and can they be reversed?
4. In the event of prolonged exposure to an atypical environment, will a child's learning capacities be permanently impaired?
5. Can special education re-engineer atypical learning environments so as to minimize their negative effects on children?

It is predicted that, as this group of special educators addresses itself to these questions, it will become the dynamic, forceful field that it should be. Indeed, the appearance of ecological concepts has spawned a number of research studies already and more are in prospect. A concurrent healthy sign was the scheduling of at least two ecology

sessions at the 1971 Annual Convention of the Council for Exceptional Children in Miami Beach, both of which indicated new directions for COHI.

Typical of the investigations being undertaken are those by Armstrong (the effects of noise on performance), Fassler (the effects of reduced auditory input on learning), and Rusalem (the impact of home, hospital, and institutional environments on school functioning). Some of the interesting findings include:

1. Reduced auditory input is an aid to learning for some handicapped children.
2. Home and the hospital learning settings do not necessarily generate deprivation.
3. Homeboundness is a social rather than a medical phenomenon and, in a substantial proportion of cases, is socially induced.
4. A stay in a hospital for inner city physically handicapped children can be an educational blessing rather than a disaster.
5. The regular high school environment is one in which tolerance boundaries exist. The less handicapped student is absorbed readily into its life without incident but once a disability exceeds adolescent tolerance limits, that environment loses much of its functional value for the severely limited individual.

These and similar studies seem to point to another channel for the education of the crippled and health impaired. Focusing upon setting rather than disability as a learning variable, the field may get closer to the heart of the educational and social problems of physically limited children. Beyond the more obvious factors of lighting, ventilation, crowding, size of classes, machines, and room arrangement, matters of ecological concern include such social factors as teacher-student relationships, student-student relationships, groupings, school and class atmosphere, teacher behavior, and community attitudes. For example, some of the differential results obtained by special educators working with similar student bodies may be accounted for by such ecological factors as the status of the special child in the school, the location of the special class in the school building, the attitudes of regular teachers, and the community's commitment to special education.

As a learning variable, the educational setting can provide not only a promising line of research but a new focus for educators of the crippled and other health impaired. It suggests that the disability need not result in educational disadvantage if the man-made environment in which we place these children meets their needs. Perhaps, as the field abandons its traditional preoccupation with health conditions and turns to a consideration of environments as the central theme of its work, revitalization will come to this field. If the effect of ecology upon burgeoning research in the education of the physically impaired is any

indicator of what may happen concurrently to instruction, administration and supervision, and teacher preparation, such a move could be highly productive for this field. In search of an identity and fearful of being absorbed by some other area of special education, COHI seems to need an ecological emphasis at least as much as other exceptional children do.

GENERAL CONCLUSIONS

Each of the preceding statements contains the essence of the participants' responses to the Institute's major questions related to the COHI population's educational needs and the preparation of their teachers. At the end of the three day session, Dr. Gloria Wolinsky was asked to critique the conference. The highlights of her deliberations are included below.

The Institute served a valuable function in bringing this group to a point where they could share ideas and recognize their commonality of interests, concerns and problems. It appeared to have resulted in a renewed sense of mission and reaffirmation of professional identity.

Dr. Wolinsky saw it, however, as both a task-oriented and state-of-the-art conference. Participants were asked to respond to certain questions on a broad conceptual level while at the same time making finite recommendations to be implemented in the field. This juxtaposition tended to mitigate against adequate attention to the social, political, or philosophical aspects of the questions as well as to the full development of the recommendations.

Upon examining the participants' expressed concern about "being dominated by the medical model," she suggested that the questions really related to decision-making by the medical profession. It was pointed out that crippled and health impaired populations are indeed unique because of certain diagnostic entities that are medical in origin. However, the problem for educators is not the original diagnosis but rather the implication of the diagnostic entity for functioning in terms of the intellectual and social expectations of the child within the school systems. The extension of the medical model then permits the instructional personnel who work with the medical model of training and service to make the decisions which are essentially educational in nature. It is then left to us to resolve the problem in terms of the intersection of the medical and education models with reference to the common properties that are still quite discrete. The nature of the COHI populations means that their lives and part of our professional lives are often within the medical continuum.

Despite the broad efforts of the Institute to identify the issues critical to professional preparation in the education of the crippled and otherwise health impaired, Dr. Wolinsky suggests there is a continued need to explore some simple questions in depth, without preoccupation

with other pressing goals. Among the questions worthy of such study are: Who are COHI children? Where are they to be found? Why are they there? What services do they need? How long should services be provided? What competencies must these children have? What skills are needed to work with them? What interventions should be used with these COHI populations? Of what intensity and duration should this intervention be? Such an investigation might then settle the circular, non-productive route which emerges as we fixate on definition and intellectualizations of professional inferiority rather than on the goals and tasks of our professional expertise.

Since this field is concerned with individuals who are vulnerable because of their inability to cope with the environment due to limited mobility, their dependency on medication and other prosthetic devices for simple maintenance of life, their communication problems, and their difficulty in integrating environmental stimuli, there is also need to discuss the impact of other major issues in terms of professional commitment to this group. Among these critical issues are the following:

1. The increasing industrialization and mechanization of our society.
2. The lag between the technology as applied to the solving of certain problems, and the solutions to problems resulting from the technology that solved the problems.
3. The need for skilled workers with a concommitant lessening of demand for semi-skilled workers.
4. The fact that we are on the threshold of human engineering with potential for genetic modification.
5. The pressure on old values and the emergence of new values.
6. The increasing role of planned and manipulated external vicarious stimuli.
7. The radicalization of institutions and institutional life.
8. The concept of child advocacy.
9. The dimensions of the demands for accountability.
10. Pressures on the family unit and the changing roles within this constellation.

These topics seem particularly important since the COHI populations truly reflect the technological advances of our society. Yet, they are the victims of some of the unsolved problems in terms of education and care.

Summary and Conclusions

The concluding portion of the critique reaffirmed the need for a continuing dialogue concerning the problems that currently beset those responsible for professional education in this field. It was suggested that a series of task-oriented meetings or seminars be planned to deal with fundamental problems. Hopefully, from these meetings and continued relationships will come new approaches to the education of disabled children. The West Point Institute was thus seen as the first in this series.

From the Institute participants' discussions and summary statements, there appears to be agreement on the following points:

1. For educational planning and programming, emphasis must be placed on physical definition, functional problems, and program modification rather than on the medical definition of a disability area.
2. The field needs an instructional system responsive to the multiple handicaps of the child and focused on individually prescribed educational objectives.
3. Cooperative planning for the education of the physically disabled requires cross-categorical efforts within special education as well as cross-disciplinary and interagency communication.
4. Expansion of educational programs is required for infants and pre-schoolers as well as adolescents and young adults who are disabled.
5. Crippled and other health impaired populations should participate with non-disabled peers in school and in other activities to a greater extent than they now do.
6. General skills and knowledge necessary for teaching COHI populations have been identified. There is need for further specificity and competency-based teacher education programs.

Improvement through change requires a strong commitment to evaluation and research. The revitalization and emerging professional identity of the conferees resulted in the expressed need for continuing dialogue and in-depth study of the physically disabled in a changing society with a changing population.

APPENDIX A

Program Considerations:

Prepared Papers

These papers prepared for the West Point Institute generated a wide range of reactions with receiver perceptions depending to a great extent upon the participant's recency of experience, professional training and level of professional dissatisfaction. The topics cover specific approaches to the instruction of children and the preparation of teachers; knowledge of areas other than instruction *per se* (motor learning and architecture); doctoral study related to the education of the crippled; individualization of instruction and broadening the parameters of the specialization area. The presentations as well as the subsequent discussions provided conference discussion input.

Although the following presentations appear somewhat isolated in this publication, at the conference each speaker participated in the small group meetings which followed. This interaction, while not equally effective for each speaker, enabled them to respond to specific questions and to receive concrete suggestions for further study in a variety of related areas.

By including these papers in the report it is hoped that their relevance to specific situations will be clear to some program planners and modifiers—that they will encourage some change critical to the revitalization of the education of the physically disabled populations.

Program Considerations

INDIVIDUALIZATION OF INSTRUCTION

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I planned, originally, to speak to you about individualized instruction as related to crippled children. As I considered the topic, however, it became apparent that I would be supporting a concept that should not be reinforced. Every group discussion at this meeting seems to have mentioned concern about categorizing the child. I share that concern. I, therefore, will speak on the topic of individualized instruction as it relates to children, with little or no consideration for a specific population.

Secondly, I was inclined to speak to you in your terms—as professional special educators. This, of course, would have been a tactical error. I am not a special educator. Rather, I come as a representative of the Learning Research and Development Center (LRDC) at the University of Pittsburgh. We are involved with mainstream education and it is from that viewpoint that I will speak. I see no conflict. Our goals and yours overlap and converge.

The general theme of instructional programs developed at LRDC is *individualization.* That term, as you know, can be defined in a variety of ways. The physical conditions of an instructional situation, such as a bedside tutorial program, may be described as individualized. A program may be individualized by allowing each child in the classroom to progress through the same curriculum at his own rate. Unfortunately, a time limit is ultimately imposed—at the end of the third year, the sixth year, or whenever—and with it, the moment of truth. Yet another way to individualize is by varying the content of the instructional program. Children are placed in "tracks" that lead to different academic outcomes.

A fourth method, the one I want to discuss, attempts to meet the individual instructional needs of the students through modification of methods. Thus, although we may seek to have all elementary grade students acquire competent reading, writing, and arithmetic skills, we will acknowledge that these may be learned in different ways.

Individually Prescribed Instruction (IPI) initially was introduced at the Oakleaf School in the Baldwin-Whitehall District of suburban Pittsburgh. The first efforts were with a mathematics curriculum but, since that time, other instructional programs, including reading, science, and perceptual skills have been commenced. The latter is my primary

responsibility at LRDC. The IPI model calls for the stating of educational objectives in behavioral terms and analysis of those behaviors into their sub-components. These are sorted into hierarchical sequences and groupings. Pre- and post-criterion-referenced tests are written for the various objectives, along with curriculum-embedded tests that enable the teacher *and* the child to monitor progress through the curriculum. The instructional method is not critical, so long as the child attains the objectives. In theory, then, it provides a model wherein each child works in a non-oppressive, benignly structured environment that respects his unique characteristics.

As stated, my area of interest is the design and development of a perceptual skills curriculum. As you know, perception is now a high interest topic. It has, in fact, acquired a mystique, probably because of the very rapid rise of interst in the subject, the prevalence of theorists, and the paucity of hard data. One of my objectives today is to eliminate some of that mystique and discuss perception as an assortment of performance skills, skills that contribute to the individual differences observed among learners in a classroom.

The LRDC Perceptual Skills Curriculum was written for children in pre-school and primary grade settings. It is now being field tested in various schools around the country. The curriculum is based on the philosophy that the teacher must not assume, until ascertained, that the child arrived in the classroom with appropriate, concrete, information processing skills. Mental age is no guarantee of their presence. Secondly, given indications of perceptual inadequacies, the teacher is to view the problem as an educational rather than a medical one. That is, given assurance of health by the school's medical program personnel, the task becomes one of teaching skills, not treating a neurophysiological malfunction. Burdening a teacher with a medical model serves no one, and often neutralizes the pedagogical competencies of the teacher. It is still too soon to make positive statements but our research, to date, is very supportive indeed. Following the IPI behavioral model, the skills can be taught and appear to be related directly to the traditional subject areas of math and reading.

My primary objective for this presentation is not to discuss the perceptual skills curriculum but, rather, to describe our beginning attempts, in collaboration with the appropriate curriculum specialists, at the development of alternative reading and math programs that acknowledge individual perceptual strengths and deficits. Obviously, most children do not require specific accommodations; they profit from virtually any well designed program. Others, however, seem to demonstrate a need for certain specific instructional programs to learn competent reading and math skills. In essence, then, the Perceptual Skills Curriculum is intended to teach pre-school children the basic performance skills assumed by a reading or arithmetic program. The Alternative Instructional Program is an admission that complete success will not be achieved by the former. Our experience, to date, indicates

that some children display persistent perceptual deficits, regardless of therapeutic attempts. They, too, must be taught to read, write, and solve math problems. One cannot delay initiating formal instruction until "readiness" has been achieved. It may never happen—or it may be achieved only after psychological trauma has extinguished all motivation within the learner. In addition, there seems to be evidence accumulating to indicate that, indeed, the best perceptual training program for an underachieving school-aged child is a properly designed instructional program. The most effective method for acquiring auditory perceptual skills seems to be through learning to read. This, in turn, assists the child in making progress in his reading, thus enhancing his auditory skills even more. A similar relationship appears to exist between arithmetic and the visual-motor skills.

You will note that I have not tried to differentiate between etiological factors related to perceptual skills. I cannot justify such a differentiation. Has a medical diagnosis—other than for a child who is blind or deaf—ever offered information as to the preferred academic instructional approach? Of course not. The child with cerebral palsy or muscular dystrophy, or what have you, given that he can learn, is asked to learn to read. His medical problem is rarely directly relevant to his educational problem. Your responsibility is not in treating or curing his medical involvement; you are interested in teaching him academic skills.

In what time is available, I will try to describe my rationale as it is applied to the problem of alternative instructional methods. I see its ultimate application in mainstream education; it does, however, seem to be applicable to the COHI child. The classroom demands that the learner receive (decode) information through his eyes and ears and produce (encode) information through his voice and hands. These receivers and producers must all use, and treat as equivalents, the visual and acoustical codes of the culture. To do so, the child must have the ability to impose structure on to the visual and acoustical sensations that make up the codes. He must appreciate the construction and organization of the symbols used for transmitting oral and written information. That is an operational definition of perception—the ability to apply structures to raw sensory data. And, if the child is to profit from instruction, he must be able to perform these behaviors in a virtually automatic fashion so that he can do something with the abstract information that is conveyed by the code. Given inadequate and inefficient perceptual skills, learning will be less than optimally efficient.

Why do some children display inadequate perceptual skills? Nature? Nurture? Let us, at least for now, accept the logical premise that both are vital; that the integrity of the organism *and* a conducive environment are both important to proper growth and development.

All developmental skills proceed from global to differentiated in character. This is evident in a child's gross and fine motor skills. The

hand, initially a relatively gross mechanism, differentiates to a refined level. The child's voco-motor skills reflect this same shift to discrete behavior, as do his oculomotor abilities. As this occurs, we observe the child acquire the abilities to receive and produce refined visual and acoustical information.

Concurrently, the child also displays a change in the *way* he processes sensory-motor information. The very young child requires a great deal of motor involvement in the interpretation of sensory data. He must "touch" in order to "see" efficiently, he must "say" in order to "hear" efficiently. His early behavior is sensory-MOTOR, the capitals indicating the relative importance of overt motor involvement in processing concrete information. He grows and develops. The overt motor support becomes less needed; it becomes internalized, covert. This can be represented as SENSORY-motor, the emphasis falling on the first term of the pair. When he enters the classroom, the child is not expected to display a great deal of need for overt motor behavior, nor is he provided the extra time to engage in extended motor explorations. His eyes should have acquired "imaginary hands" with which to explore and manipulate the visual world. His ears should have acquired an "imaginary voice" with which to explore and manipulate acoustical space.

Visual-motor skills are usually assessed by copying tests. Do distorted and disoriented drawings of geometric designs mean distorted or "mirror" vision? No. They indicate that the child has not yet acquired the capacity to discriminate and/or comprehend the inter-relationships of the individual graphic elements that combine to form the design. It is analogous to asking an adult to copy precisely a section of lawn. This is virtually an impossible task. There are too many blades of grass. One can *represent* a lawn, not *replicate* it. The child who views visual information as though there were too many details–too many "blades of grass"–may indeed represent the details in global style. The classroom, however, ordinarily requires precise replication of data, not representation. Hence, there is confusion and, at best, inefficient learning.

Competent visual-motor processing requires the viewer to impose some type of organization onto that which is seen. In essence, it is as though a spatial coordinate matrix was inferred from the field of view, allowing for systematic analysis of the visual elements and their interrelationships. The degree of analysis depends, of course, upon the refinement of the matrix.

Discrimination tests are characteristically used to assess auditory perception. Unfortunately this method does not provide for evaluation of the child's ability to encode that which is heard. Too many children, despite adequate acuity, manifest persistent auditory confusion–confusion that indicates again the phenomenon of "too many blades of grass." In this function, of course, the undifferentiated elements are acoustic rather than visual. Many a six-year-old, for example, thinks of

the sequence "l-m-n-o-p" in the alphabet song as a single letter. This is not too detrimental to a six-year-old. It is, however, a great burden to the child who is expected to learn to read.

Again, the perceiver must learn to infer an organizational matrix from the data to be analyzed. Acoustical information is temporal. Time, in some fasion, must be organized. Rhythm provides such a matrix. But, rhythm training alone is insufficient. Reading instruction requires that phonic analysis skills be available to the child. Spoken words must be analyzed so that the phonic elements are isolated to some degree and related to visual symbols. Lacking this, the child will face the impossible task of memorizing an extensive sight vocabulary.

So what? Should a teacher train perceptual skills? Yes–if he or she can, but not at the expense of denying the child reading and arithmetic instruction. Perceptual skills are the objectives of the pre-school program. Given limited resources, the teacher of children beyond kindergarten age must attempt to teach the academic skills. Certainly, information regarding perceptual strengths and deficits is important. Perceptual strengths can be exploited to serve as mediators that assist the child in organizing sensory data received by the deficient modality. In short, the teacher should teach *to* the child's perceptual deficits *through* his strengths. Supports–crutches, if you will–are often vital to successful learning. Support is generally accessible from two sources–self, in the form of overt motor involvement, and environmental, in the form of structure presentation formats.

Examples of overt motor support? Visual: point, trace, draw in the air, count on fingers, with blocks, etc. Auditory: vocalize, or subvocalize, that which is to be processed by the ear.

Examples of overt environmental support? Visual: large print, uncluttered pages, color coded letters, carrels, etc. Auditory: phonetically biased reading instruction, diacritical marks to assist in phonic analysis (making certain that the visual-motor skills are capable of processing the markings), etc. There is not time to present an extended list of suggestions, nor do good teachers need such a list. They have been using these devices for many years, albeit not from the rationale of perceptual dysfunction.

Many educators disapprove of "crutches," yet some children cannot learn without them. The proper approach, of course, is to provide the crutch and gradually eliminate it as skills are acquired. Is this not what insightful teachers–Fernald, Gillingham, McGuinness, Stuart, and others–have suggested?

In summary, perceptual skills enable the child to receive and produce sensory codes in a reliably structured manner. Given a deficit, for whatever cause, the good teacher provides compensatory accommodations–accommodations that will allow the child to abstract information from sensory data and profit from instruction.

There is increasing evidence that most children are capable of learning, albeit to varying degrees. Some of them must be taught.

SYSTEMS OF PRECISE OBSERVATION FOR TEACHERS*

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Project S.P.O.T.–Systems of Precise Observation for Teachers–was developed in order to provide a system for observing, recording and analyzing the performance of handicapped children. Precise observation of student performance is an important tool for teachers endeavoring to isolate specific academic problems. The film, in three parts, may be used in the sequence in which it is packaged or each part may be used independently of the other two. Each part of the film has a corresponding observation guide in which the viewer records his observations, keeping the book as a resource and reference. An annotated bibliography is included in each of the guides and suggests sources of strategies for teaching to other students the kinds of tasks illustrated in each part of the film.

Part I, *Problems in Academic Task Performance*, pertains to observation of any child with problems in performace of academic tasks. It is the purpose of this part of the film and observation guide to provide practice in observing a teacher's presentation to a student and the student's response to the presentation. The need for learning a system of precise observation is demonstrated by the kind of statements below which are often heard in the school setting to describe student performance. Note the *lack* of precise information about what the students can and cannot do.

1. "Peter is a non-reader."
2. "Susie knows some of the letters."
3. "John Henry is in the pre-primer."
4. "Karen knows the letters l, o, m, etc."

Presented in the film are portions of one student's verbal and written responses to alphabet symbols presented orally and visually. These skills are seen as basic to reading and spelling achievement.

The accompanying guide is designed to help the observer record relevant elements of the materials and instruction presented as well as

*This presentation was accompanied by a three part sound film and observation guide. The film, guides, and a price list are now available through the National Audio Visual Center, Washington, D.C. 20409. Address inquiries to Mr. Les Greenberg.

SAMPLE

TEACHER PRESENTATION CHECKLIST

(How presented)	(What presented)	(Performance requested)
___ Spoken	✓ Symbols: naf, frs, sia, jsip	___ in isolation while looking at symbols
✓ Printed on flashcards		___ in isolation from memory
___ Printed on blackboard	___ Sounds:	✓ to be sounded; ___ to be written
		___ in sequence while looking at symbols
		✓ in sequence from memory
		___ in sequence and blended
		___ in sequence and blended and stated as a word or not a word

ACTUAL STUDENT PERFORMANCE

	naf / naf	trs / frs	sib / sia	jain / jsip	[actual perform. / requested perf.]
Saying					
Printing on paper					
Printing on blackboard					

SUMMARY STATEMENT

Given: printed on flashcards (How presented) the symbols naf, frs, sia, jsip (What presented)

to be: sounded in sequence from memory (Performance requested)

the student performed by: saying (Actual performance) naf/naf, (trs/frs), (sib/sia), (jain/jsip)

to record student performance. Such precision in observation facilitates the teacher's choice of the most appropriate teaching strategies for these academic tasks. An observation checklist has been developed as a temporary aid for precise recording of important elements of a teaching-learning exchange. Instruction and practice is then given in formulating a summary statement to describe what has taken place. The first two sections of the statement describe kinds of information about the teacher presentation and the third section of the statement describes what the student does in relation to what was requested of him.

1. how the material or instruction was presented
2. what sounds or symbols were presented and
3. what performance was requested of the student

The second part of the film, *Problems in Self-Help Task Performance,* shows handicapped children attempting to perform certain self-help tasks. Some self-help tasks basic to independent classroom functioning by the handicapped child include moving from place to place, sitting or standing to do school work, using classroom tools, dressing, feeding, and toileting. The accompanying observation guide provides practice in observing and analyzing components of some self-help tasks. The viewer learns to record observations of the students in the film in a format which precisely describes the task to be taught, those parts performed by the student, and those parts not performed by the student. There is no way of listing these parts.

Choice of what components are most important and how many components are to be listed depends upon the decision of each viewer. The first part of each summary statement describes a given task and may include any important conditions under which the task is performed. Such conditions might include descriptions of what special equipment is needed or where the action is to take place. The second and third sections of the summary statement list, respectively, those parts of the task the student performs successfully and those parts of the task which present problems for him.

Listing observations of these precise task components enables one to decide upon the most appropriate teaching strategy, the choice of which might involve 1) teaching the uncompleted parts of a task in order that the entire task be performed, 2) teaching the task in an alternative way without the use of assistive devices, or 3) using special devices to accomplish the task. Whenever possible, teachers should confer with medical and therapeutical personnel regarding their instructions or recommendations for teaching self-help tasks to children with physical limitations.

When dealing with handicapped children we may need to give assistance at some points, devise alternative methods of completing a specific task (or some of its prerequisite elements) without special equipment, or design special equipment and procedures. The third

SAMPLE

PROBLEMS IN SELF-HELP TASK PERFORMANCE
SUMMARY STATEMENT

Given the task of: opening the classroom door and walking through it while using crutches

the student *performed* these parts of the task:

1) walked to the door
2) stood in position to open the door
3) released hand from crutch to reach for knob
4) reached door knob
5) grasped knob
6) turned knob
7) pulled door open
8) released door knob

but *did not perform* these parts of the task:

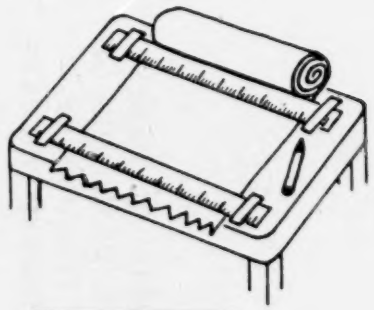
1) grasp the released crutch before the door closed
2) walk through the door
3)

ADAPTIVE DEVICES OR PROCEDURES AIDING COMMON TASKS

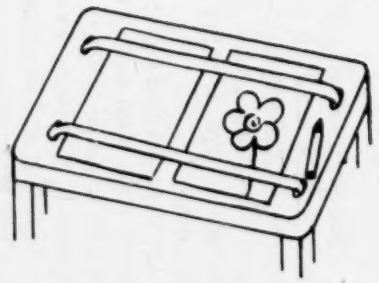
HOLDING PAPERS

PAPERS IN

PAPERS UNDER



TAPED OVER PAPER

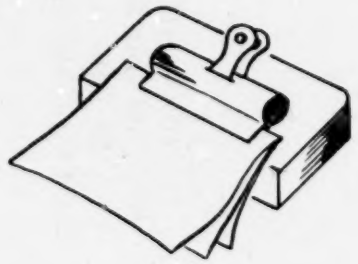


ACROSS PAPER

CUTTING

HANDLED SCISSORS

PLASTER FILLED SCISSORS HANDLES



BLOCK WITH CLIP TO HOLD PAPER WHILE CUTTING

PAINTING WITH HEAD WAND AND PAINT BRUSH

portion of the film, *Devices for Self-Help Task Performance*, illustrates procedure, equipment, and material which may be used to facilitate performance of self-help tasks for those children who have rather severe physical limitations. The accompanying observation guide for this section directs attention to pictures which are kept as a permanent record of adaptive devices presented on the film.

Illustrated are several ways for more severely involved students to further their independent accomplishment of classroom activities. It is the purpose of this part of the film and guide to allow the observation and description of aids to student performance in 1) moving from place to place, 2) moving to and from the floor, 3) sitting and standing in the classroom, 4) completing common tasks such as holding papers, turning pages, cutting, painting, and eating, and 5) communicating.

DOCTORAL STUDY IN SPECIAL EDUCATION WITH SPECIAL REFERENCE TO THE AREA OF THE PREPARATION OF TEACHERS OF CRIPPLED AND HEALTH IMPAIRED CHILDREN

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Tucson, Arizona

Graduate training in education is being indirectly challenged or tested today. First, there is widespread criticism of the effectiveness of much of the research which has resulted from the massive federal funding. It now appears that the present administration in Washington believes that better research would come from a new approach—a national institute. Your students and mine carried out some of the research that is being criti[illegible]d. Indirectly this is a criticism of us, our programs, and the training w[illegible]h we gave our students.

Second, the many innov[illegible]tive practices which have resulted from federally funded work must be adequately evaluated. This becomes a responsibility of the researcher—and he is a product of our training. Here, again, is a challenge for us and our students.

Third, we must remember that most research in education is done by individuals rather than by teams of experts. Consequently, this fact

places a special responsibility upon us to train competent researchers–research workers who are somewhat self-sufficient. So, there are some direct challenges before us today as we discuss post-master's prepa:a-tion of professional personnel.

Now, as one examines doctoral programs, he is impressed with the formal, printed requirements which the student must observe. Perhaps these requirements, all the steps in the process, the machinery, so to speak, are corollaries which result from trying to serve relatively large numbers of students. That is, as the number of students and advisors increases, the number of questions the students ask increases–so we must have a system, a set of common rules for all. There have been some strong objections to the array of formal requirements which have evolved over the years. By the way of a sharp contrast to this approach, let us look for a moment at an idealistic approach to graduate study. Carl Rogers has dealt with this problem in his book *Freedom to Learn* (1969).* Below are some selected excerpts from the guidelines for graduate study which he proposes:

The whole program is to provide a situation which:

- Will restore, stimulate, and enhance the unquenchable curiosity which the student has as a small child;
- Will encourage the student to choose his own interests and to develop these into mature and growth-promoting professional goals;
- Will provide all types of resources–the written word, the laboratory, the equipment for programmed learning, the informed human being, the relevant organizational experience, the relevant community experience;
- Will permit the student to make responsible choices as to his directions and to live responsibly with the consequences of his mistaken choices as well as his sound ones;
- Will give the student a participative role in forming and building the whole graduate program of which he is a part;
- Will be primarily oriented toward the future problems of the science and profession rather than its past history or even the present accumulation of so-called "facts;"
- Will be oriented toward a focus on the solution of significant scientific and professional problems rather than primarily upon methodological training in a discipline;
- Will develop the student as a self-disciplined and critical learner able to evaluate his own contributions as well as those of others;
- Will enable the student to adapt intelligently, flexibly, and creatively to new problem situations in the future, problems undreamed of at the time of his graduate work;
- Will enable the student to make continuing, creative contributions to the solution of the human problems which at this point threaten to abolish the human race.

*Columbus: Charles Merrill Publishing Company.

Few of us would object to Rogers' aspirations for his students. He wants to produce creative leaders by having them trained in a creative environment. We have great difficulty, however, visualizing how such a set of suggestions can be translated into an operating program.

A student expressed his views regarding the inadequacy of the training program in this way:

> The greatest criticism of existing degree requirements, as far as I'm concerned, is the lack of relationship between the behaviors necessary to complete a degree and the behaviors necessary to be successful in the kind of a job for which the degree is supposed to prepare you. It seems the only thing that is common to both is the ability to stay at a task for a long time without quitting.

It does seem most profitable in this discussion, however, to consider graduate education as we know it and to relate our training programs to current practices. The need for a complete reform is clearly recognized, but this is a different topic and must await another occasion.

Doctoral Level Work

Is special education in your area of interest sufficiently developed for genuine doctoral level work?

My answer is yes—with a qualification. One must allow students to elect strong courses in other areas which are related to his major interest. Perhaps the following two areas of special education have sufficient graduate level content to stand alone and permit fairly strong programs: speech and hearing, and mental retardation. We might add learning disabilities as a third area. It is difficult to get truly advanced courses in such areas as the crippled, the gifted, and perhaps the visually handicapped. One has to search hard for truly advanced courses in your area of primary interest. I am focusing upon advanced doctoral level courses since it is here that our unique preparation is found. An advanced course in medical aspects does not have sufficient relevance to the overall program to be justified. Perhaps a course in the psychological aspects of physical disability would have special value. Also, the material in learning disabilities may have special application to your field. This area deals with the diagnosis and remediation of many problems which one finds among children with physical handicaps. Mental retardation also is sufficiently prevelant among children with whom you are concerned to justify the inclusion of an advanced course in retardation within your program.

Many students appreciate an opportunity to elect courses in related fields. A recent graduate expressed the value of his related study in psychology in this way:

> The feature I liked best about the program in which I participated was that I could take most of my courses in psychology since I already had an extensive background in special education. I feel that special education as an area has little in the way of its own content, so the opportunity to develop skills in other areas

in order to bring them back and apply them to special education is the appropriate way to go.

I realize that your students need information from such areas as rehabilitation, speech therapy, sensory processes, etc., but courses drawn from such fields may not qualify as advanced doctoral level work. I have not tried to distinguish here between courses which are within the field of professional education and courses which may be outside the college of education, such as psychology, neurology, etc. Our primary concern is the *contribution* of the course to our objectives and not its home base in a university setting. It does appear that we must go outside our college to get the contributions which we want.

A minor outside of education is frequently required. Here is a student's view on how to make such a minor more relevant:

A minor is supposed to be supportive to your major program, but what happens often is that the minor advisors consider you to be a major in their field and evaluate you in terms of standards they set up for the rest of their majors. It seems that it would be more relevant for the student and his major advisor to select courses throughout the university that are supportive to his own major area and then the evaluation of such courses would be done by his major advisors. They could test or evaluate in terms of the desired relevance.

I have been referring to doctoral level courses. Now—*how does a doctoral level course differ fram an undergraduate or master's level course?*

You have struggled with this question and you may not always be able to design each course to satisfy your ideals. Institutional requirements and local politics sometimes cause one to modify courses which must be approved by our colleagues.

One is impressed when he reviews doctoral programs at what appears to be a lack of graduation in difficulty or progressive advancement in courses from the master's level to the doctoral level. Some doctoral programs appear to be one master's level set of courses on top of another. The best criteria for checking a doctoral level course, according to Kirk, is the extent to which it deals with the subject matter at a *conceptual* level or *theoretical* level (Kirk, 1959).* Let's look at some course titles and indicate how this difference may show up in practice.

Doctoral Level Course Emphasis

Probable Title	*M.A. Emphasis*	*Doctoral Emphasis*
"Trends and Issues in Special Education"*	Perhaps a description and analysis of ten or twelve current issues	Let the student discover issues in each area by reviewing the research. What

*Samuel A. Kirk, "A Doctor's Degree Program in Sepcial Education," *Exceptional Children,* 1959, 26:104-109.

		are the issues which *researchers* have focused upon? Also, what additional questions are raised by these findings?
"Mental Retardation"	Nature of retardation, etiology, implications, etc.	Contributions of education, psychology, sociology to the understanding of retardation.
"Psychological Aspects of Physical Disability"		Application of psychological theory, preparation of case studies. Interpretation of cases from the counselor's file
"Education of Crippled Children"	Problems, methods, etc.	Learning theory and the cerebral palsied child; evaluation of research and its relation to theory.

Dr. Kirk's position with reference to doctoral level courses in a statement made for presentation here, follows:

I am afraid that the way we are going now we will probably be turning out a great number of doctoral students in special education who are not really trained in a scholarly fashion. The need for doctor's degrees has been so great in the past that I fear that colleges and universities have designed a rather practical program for a doctor's degree, and not one that makes scholars out of them.

For example, I think the doctoral student should take what I call *doctoral level courses*–not a series of master's degree courses until he has piled up enough credits. By an advanced course I mean one that is able to take the theories and ideas of related disciplines–such as psychology, sociology and biology–and transfer the information to exceptional children. Much of our knowledge comes from outside the field of special education. Now medicine, for example, requires that doctors be trained in physiology, biology, biochemistry, and many of the other basic sciences before they become doctors. What are we doing to doctoral students in special education? Are we allowing them to explore the various fields of knowledge and ask the question of how these fields may make a contribution? This, I think, should be the content of advanced graduate courses. Now one of the difficulties we have had is to find professors who themselves are interdisciplinary trained who can amass some of this information and translate it into our programs. As it stands now, many of the colleges are taking young Ed.D's who haven't had any courses outside of education and are asking them to teach these advanced courses. I hope that in the future we will raise standards for the doctor's

*The author has no particular brief for his course titles. The doctoral emphasis described represents an approach which was used experimentally. It approximates the criteria previously described.

degree rather than lower them as we have in the past. I am sure that within a few years we will have an oversupply of the present type of doctoral students that some of the colleges are turning out.

Students do feel a lack of integration of knowledge from related disciplines. Here is how one third-year student wants to facilitate integration:

If there were more opportunity for the integration of the materials being acquired at many points in his work, the student would be benefited to a much greater degree. When one is forced to integrate his knowledge, he sees the holes and gaps; he sees the bridges between assumptions and conclusions. Many small comprehensive examinations, both oral and written, would seem to be appropriate–particularly if these were held in the presence of his peers and followed by a critique.

Specializations

What is the place of the specializations or options at the doctoral level?

Doctoral level work in the traditional subject matter areas at a university includes blocks of advanced courses and very advanced seminars. Biology, history, and chemistry all have such advanced courses. It seems a little inconsistent with university practice for special education to be offering a degree, or in some cases implying that there is a degree offered, in areas which have only two or three advanced courses. Does one get a degree in special education in the area of the gifted or the education of crippled children? Hardly! Certainly not in the usual context of doctoral specialization on a university campus. I am therefore proposing that we think of our nice little options as areas of *research* for advanced students–that is, a student does his dissertation in one of these areas. These seven or eight options are invitations to do research. A little honesty regarding the nature of our specializations would help our field. The student's own professional preparation is much broader than his special research interest.

In a recent study on doctoral programs in institutions which had federal support in at least three areas of special education, I was impressed with the extensive number of options or specializations offered.* As you might expect, the influence of the categories is clearly reflected here. Some of the institutions with extensive offerings were as follows:

University	*Number of Options for Ed.D.*	*Number of Options for Ph.D.*
Columbia	7	3
Pittsburgh	7	7

*F. E. Lord, *The Doctorate in Special Education.* Los Angeles: California State College, 1966.

Syracuse	6	7
Illinois	6	6
Kansas	6	6

It is indeed misleading to think of these options as levels of high specialization on a par with other disciplines in a university.

As we have learned more about the needs of exceptional children, it has become apparent that teachers in any one of the areas encounter children with problems of another area. For example, retardation is common among crippled children, and indeed also among children in such areas as the visually handicapped and the behavior disordered. A well trained person at the doctoral level should have an understanding of the wide range of problems found in the handicapped population.

The entire field of professional education is highly splintered. Someone has pointed out that over fifty specializations are now available in American colleges of education. Perhaps twenty percent of these are in special education.

Objective or Focus

Earlier we looked at the objectives of doctoral study as advanced by Rogers. His objectives were, in part, an appeal to return to some of the emphasis which characterized the early degrees. Our first doctoral programs, historically speaking, did stress self-direction, independence, scholarship, and creative research. These programs were not surrounded with formal course requirements and all the machinery which we now have.

We are all caught in the ambivalence of graduate program objectives. We seem to focus upon the training of researchers or development of scientific competencies on the one hand, and the development of professional competencies on the other. We tend to associate the Ph.D. and the Ed.D. respectively with these sets of competencies. We will make some real progress in our programs when we separate more clearly the objectives and the training relating to each of these degrees. *The Ed.D. degree has lived far too long in the shadow of the Ph.D. requirements.* In fact, there have been institutions which required one language for the Ed.D.

If we compare the requirements in statistics and research methodology courses which are built into the two degree programs, we do not find clear differentiations in such requirements. In the study of doctoral programs in institutions which offer post-master's training in at least three areas of special education, the research requirements of the two degrees may be summarized as follows:

Of the 14 institutions studied, 10 offered both degree programs. Of these 10 institutions which had dual programs, 7 did not specify a difference in the research and statistics courses; 2 were judged to be somewhat alike in requirements; 1 clearly showed a differentiation.

If one examines the unit requirements for the two degrees, there is again considerable similarity between them. Of the 10 institutions offering both degrees, 7 appeared to have identical unit requirements for the two degrees, and 3 made meaningful distinctions–in some cases requiring more units for the Ed.D. degree.

A recent study by Buswell and McConnell directed its attention to the preparation of researchers for professional education (1966).* As a result of their extensive study, they made some recommendations relating to a Ph.D. training program. If these recommendations were followed, we would have a clear distinction between the two degrees.

Here are five recommendations which resulted from their study:

1. The investigators found that the most productive research workers had a strong liberal arts background rather than a background in professional education. (May I point out in this connection that we have here an additional argument for strong minors *outside* of the college of education.)
2. Productive researchers are relatively young. They recommend that students should be recruited who are under thirty years of age. This is a field for youth who are in the creative period of their lives.
3. They recommend that the teaching requirements should be eliminated for promising candidates interested in research.
4. Requirements should be extended to three years of continuous residence for the Ph.D.
5. Free the student from excessive preoccupation with the mechanics of doctoral study by:
   a. establishing a minimum of course requirements;
   b. providing opportunity for early immersion in research;
   c. encouraging a maximum of independent study and
   d. providing a research environment in which the student is free to experiment with new ideas and methods and to *interact with scholars* in education and related fields.

With the modification or elimination of the language requirements for the Ph.D., the chief distinction between the Ph.D. and the Ed.D. has been erased. Consequently, it appears that there is a good chance now to back up and make some valid distinctions.

The suggestions just reviewed do clearly differentiate the Ph.D. from other professional degrees–especially the Ed.D. I understand that the Carnegie Commission on Higher Education Report which has just been released calls for sharp differentiation between degrees. The Commission recommended that the Ph.D. be reserved for scholars who are primarily interested in research. A new degree, Doctor of Arts, would become the standard degree which would be earned by completing four years of study after the B.A.

*Guy Buswell and T. R. McConnell, *Training for Educational Research,* Center for Study of Higher Education, University of California, Berkeley, 1966.

Residence

Many of our problems associated with strengthening doctoral programs are related to the fact that we crowd so much in a short period, especially for students who are not in residence full time. Much of our elaborate machinery which we live with has been designed to keep part-time students from going astray. While our fellowship students are in full-time residence, we do have other students who are electing a partial schedule. Students who commit themselves to two or three years of continuous residence should be programmed with a little more flexibility than our part-timers. We may not have been innovative enough with our full-time students. A third year doctoral student expressed his concerns over inflexible requirments in this way:

It seems that too many things pile up at one time in the doctoral program. Everything seems to come early in your last year. You have your written preliminaries, your orals, and the preparation of your dissertation proposal. I would think these things could be spread out more evenly throughout the program and that these artificial time requirements by the graduate college could be eliminated in order to relieve some of the almost insurmountable pressures that students have during their final year.

Integration of Content

If we draw upon courses in related fields, then we have the problem of integration of the information. The field of learning disabilities has grown up around information from communication theory, perception, learning theory, sensory-motor development, etc. This area represents a model for relating material from several fields to specific problems.

You will, I hope, in your training draw heavily upon information from other areas and from other disciplines. If you draw your information from mental retardation and learning disabilities *and* from the unique information in your own area, then you will want some integrating experiences. Of course, your advanced seminars are the common device for doctoral level integration. Here we focus the content of these areas and others upon problems of learning and adjustment of crippled children. This is by no means an easy mission since the instructor has to be well informed in several areas and try to bring out information which is pertinent to the solution being sought.

Students also find the integration of content difficult. A third year doctoral student in your area of interest expressed his concern in the following manner:

I have taken many courses in the department of psychology and in the medical school. These disciplines have a lot to offer. However, I find it difficult to work out the relationships between my field and these other disciplines. I seem so occupied with just getting a mastery of the content, there is little time left to work out relationships.

Perhaps some college teaching of undergraduate or master's students would be a good challenge to the doctoral student and would give him

experience in interrelating the information from several areas. As one focuses in on a learning problem of a child, one has to bring the information from all disciplines together. This teaching assignment may well be undertaken as the applied side of advanced seminars. As a device to urge the students to draw upon information in other fields, one could use a planning sheet which would deliberately invite an interrelation of the disciplines. A modest example, taken from the field of vision, might be as follows:

From Physics	*Concept to be Taught*	*From Anatomy & Physiology*
Transmission of light	Visual acuity at 20/200	Retinal image
Inverted image		Accommodation
Visual angle		Central vision
Visual angle		Distant vision
of 1 minute		
of 5 minutes		
Focus of light rays		

Not all candidates would agree with the student quoted below on how he would facilitate the integration of subject matter in the doctoral program:

> The features I liked best and which were most valuable to me were the written and oral qualifying examinations. These are the times when all the information one has collected can be integrated–when everything can be focused not only in terms of abstract questions, but in terms of specific application of principles. The examinations seem to be the culmination of a learning process through which exposure leads to understanding, and understanding to application.

Independent Study or a Free Semester

If the aim of the doctoral program is to prepare a professional who has the ability to direct his own career creatively, it might not be too early to give him some experiences in self-direction in his graduate program. Rogers, as well as Buswell and McConnell, suggested this. An assignment relating to independent study would seem to be especially appropriate. However, a better plan would be to try to clear a semester in his program for free study and self-improvement. This could be done if we had three years of residence as a requirement. This should be a helpful relief from pressure and also an excellent chance to evaluate the student's capacity for self-direction. I realize that there are some very practical obstacles in the supervision of independent study or a free semester.

There are a number of questions which this paper and others will raise. I will conclude my presentation by listing some of the questions which seem important to me:

1. How clearly have we defined the objectives of the degree? Really, what competencies do we expect to develop in the student? Are there ways or

means to develop these competencies which we are not using extensively?

2. What are the closely related areas within special education? Which would you give the greatest support to for the preparation of personnel in your area?
3. What disciplines or courses *outside* of special education would offer advantages?
4. Can you outline ways of adding depth to an advanced course? Are there ways other than trying to add the theoretical dimension which was described?
5. Do you agree that the machinery is too complex and involved? If so, how can it be reduced or "greased?"
6. Do you accept the idea of some freedom through independent study as being desirable? If so, what areas of subject matter within your field lend themselves to independent study?
7. If we are trying to prepare competent research workers, do we provide an adequate immersion in research activities throughout the training period?
8. All doctoral students complain of the pressure of the hurdles and the pace of the training. Is this complaint valid? Is it really beneficial or is it detrimental? What steps might be taken to provide a better atmosphere for growth? Is the "rat race" good training for the future?
9. Most writers point out that doctoral training should produce a creative, productive worker. Is the pressure, the pace of study, the best atmosphere to develop the creative spirit in man?
10. If we lengthened the full-time residence requirement, how would you and your students change your program?
11. The concept of "bargaining" is becoming common in education. Some college instructors argue that it should be a privilege of doctoral students. Do you agree?
12. How does the concept of accountability apply to doctoral training? Who is accountable? What are the criteria to be used?
13. Are there ways of improving the selective process as a means of improving the preparation program? If we had only able, self-directing students, would we be able to do a better job?
14. There has been some discussion of a tailor-made or highly individualized program for each student. What is the defense for our *common* requirements?

The quotations which appear throughout this manuscript were transcribed from tape recordings which were played during the original presentation. The author expresses his sincere appreciation to Dr. S. A. Kirk and to the several students who contributed these statements on the various issues.

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NOTES ON EDUCATIONAL ENVIRONMENTS FOR CRIPPLED AND OTHER HEALTH IMPAIRED CHILDREN

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Environment as a Teacher's Aid

Many teachers tend to think of the physical environment as immutable and unyielding. It is considered negatively as a necessity to protect its inhabitants from the weather and house furniture and equipment. Furthermore, it is a good environment if it is easy to keep clean and nothing breaks, especially the air conditioning.

This viewpoint must be changed to a viewpoint wherein the physical environment is considered as a positive and valuable contributor to every educational setting. It must be considered as an element in the total educational ecology which can be manipulated and utilized as an effective educational aid. Furthermore, teachers in their training must be made aware of the role which the physical environment plays in education and taught the methods for its effective use.

Environment as a Sequential Challenge

There are two positions to be taken regarding environments for handicapped children. On the one hand environments could be created which would completely compensate for the disability thus resulting in a "normal environment" for the handicapped. On the other hand the environment as it exists for the majority of people could remain unchanged and means for various disabled people to cope with that

environment could be devised. The premise for this position would be that all disabled people must learn to cope with a majority environment eventually.

If the physical environment is thought of as changeable (rather than unchangeable, as assumed in the above positions) then a new environmental position can be formulated. This position might be termed as a sequential challenge wherein the environment could evolve from a compensatory environment for the youngest children to a normal environment for older children. The evolutionary steps would be determined by the disabilities and the educational progress of each child. For some children certain aspects of the environment would always have to remain compensatory for their disability. However, the degree of environmental compensation would be determined by each child according to his disability.

Motor Experience Deprivation

We all experience our physical environment through our bodies, our muscles, bones, and appendages. Crippled children and adults are deprived of this kind of essential environmental experience. Environmental research must be conducted to learn of ways to create environments which will compensate for this experiential deprivation.

Special Early Childhood Environments

Early childhood learning is in large part environmental learning. This is when the child learns to use his physical environment, to structure it, to perceive it, and to learn from it. As the child gets older, academic learning takes precedence over environmental learning.

The design of the physical environment for early childhood education is therefore much more important than it is for later childhood education. When the needs of special education are superimposed upon the educational setting the design of the physical environment assumes even greater importance and complexity.

There is a significant amount of architectural research presently being conducted concerning early childhood environments. However, there is a great need for architectural research concerning the environmental needs of handicapped children during early childhood education.

Open Plan Special Schools

The design concept of open plan schools has become very well accepted for all kinds of regular educational situations. Open plan schools have many positive benefits which are particularly relevant in today's educational trends of greater flexibility, specialization and individualization. The use of open plan schools for special education has recently begun to be explored. There are some demonstration projects which are under way. A great deal of research needs to be done

concerning the design of open plan schools for special education and their positive and negative benefits.

Barrier-Free Architecture

The concept of barrier-free architecture should be accepted as a *fait accompli* although it is at present not completely implemented. The integration of barrier-free architecture with barrier architecture requires more design exploration. In some cases barrier-free architecture can be used by everyone; having only ramps in a building is certainly a satisfactory solution. In cases where separate facilities are required, they should be integrated in design so as not to foster segregation through the architecture.

The concept of barrier-free architecture is again negative. Once accessibility and use has been insured for all people, we must begin to think of positive roles for the physical environment. Should not the environment be designed to assume therapeutic and supportive roles and become a positive factor in our lives?

Architectural Decisions

An unavoidable characteristic of the architectural act is that a commitment must be made. Architects must make decisions in order to accomplish their professional function. Many times they make these decisions in the absence of complete information, because it is not available to them.

Architectural decisions should not dictate educational programs. Too often architects must make educational decisions by default. As a result, the buildings do not effectively lend support to educational programs. They may even prohibit them from occurring.

Educators must make decisions and commitments regarding their programs so that architects can then provide environments to house and support those programs. Although not all educational decisions can be made to equal levels of detail before the building is built, the statement of areas of decision or indecision to the architect forwarns him of the necessity to provide flexibility in certain areas of the building.

MOTOR LEARNING AND BIOMECHANICS REPORT TO COHI

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I shall begin this report by defining how we at Teachers College, Columbia University, Motor Learning and Biomechanics Program, define motor learning and biomechanics. This will be followed by a brief description of our degree program and its relationship to programs in special education in general and specifically for programs training specialists to work with/to teach the handicapped. Finally, I will propose several specific suggestions related to how students in the area of the handicapped may benefit from and contribute to the defined area of Motor Learning and Biomechanics.

Motor Learning and Biomechanics Defined

We define *motor learning* as an area of study seeking to understand the nature of development, acquisition and performance of man's goal-directed movements. Using empirical modes of inquiry (experimental, case study and correlative), the prime level of observation is behavioral. Our tools of inquiry are behavioral, biomechanical, and neurophysiological. Analysis is, therefore, multidimensional in that it involves several behavioral measures or the simultaneous analysis of behavioral, neurophysiological, and biomechanical measures of movement.

This area of study is concerned with understanding the movement patterns involved as man engages in goal-directed activity—where the performer/learner has a goal, within the environment, and movement is necessary to accomplish that goal. Generally, we are not concerned with the study of movements which are species specific, reflexive, or not the result of prior experience. The major thrust of inquiry is to refine our understanding of how the human organism learns to move, to maintain position, and to manipulate objects in time and in space. Man the mover organizes his movements or movement patterns according to a "goal" which he establishes in the environment. Hence, our study of motor patterns involves understanding the complex interaction between the goal, the environment, the movement itself, and the movement outcome.

Goal-directed movements are broadly classified as orienting movements and adaptive movements. Orienting movements allow the sensory

receptors to pick up information from the environment and/or to focus attention on a specific environmental factor(s). Adaptive movements are of two types–direct and indirect. Both allow the organism to move its limbs or body in relation to the environmental conditions so that a goal may be accomplished. Indirect adaptive movements are defined as communicative movement patterns and involve such things as gestures, facial expressions and speech. Direct adaptive movements on the other hand accomplish a "goal" in direct relation to the environment. They are the movement patterns involved in moving the body and/or the body parts in space and/or in manipulating objects in space in order to accomplish the goai. For direct adaptive movements, the movement itself produces an outcome upon the environment which is directly related to the goal. Since the goal of indirect adaptive movements is communication, the outcome produced by the movement can only indirectly influence the environment.

Biomechanics is the study of the functional, structural and mechanical aspects of the moving human organism. Biomechanics merges with the study of motor learning by helping to establish meaningful relationships between performance outcomes and the factors producing the outcome. Study of the morphological and environmental constraints imposed upon the performer and their relationship to each other are within the domain of biomechanics. With skill acquisiton and performance as our primary referent, we use specific biomechanical correlates to better understand the nature of the process of learning and the interrelationship to the learner/performer. These correlates include such factors as anatomical considerations and constraints, environmental constraints, and limb displacement, acceleration, and velocity. Ultimately, we are concerned with contributing to the improvement of the process of teaching and learning, but our first thrust is with better understanding of the individual performer and the process of acquiring goal-directed movements.

Two important factors become important in the foregoing discussion of the motor learning and biomechanics as an area of study–the environment and the morphology. Man is endowed with a unique morphology and he must learn to relate to his environment given these morphological constraints. The systematic study of patterns of movement and the changes occurring during skill acquisition and performance in relation to behavioral observations is the essence of our area of study. Serious attention is, therfore, given to understanding both the environmental and morphological constraints imposed upon the individual as he acquires motor skill and performs goal-directed movements.

Motor learning and biomechanics acknowledges both the focus of substantive study and the nature of analysis. It is an area of study seeking to understand the nature of man's goal-directed movement and his ability to develop and match a repertoire of movement behavior to the constraints imposed by both the morphology and the environment.

Description of the Degree Program in Motor Learning and Biomechanics and its Relationship to Special Education (Specifically to COHI Specialists)

The basic program is three years of study directed toward completion of the Ed.D. degree (an M.A. and Ed.M. degree may also be earned). The core courses in substantive areas and research training are usually completed by the middle of the second year of study. The last year and a half of study is designated as individual study. Students usually select specialized seminar topics, develop a uniquely defined set of courses and experiences that meet their scholarly and professional objectives, and develop and refine their dissertation topic/problem.

There are two general directions that a student might take during the individual study phase or portion of his program: 1) advanced specialization in one of the specific domains within motor learning and biomechanics, or 2) development of a professional sub-specialization which provides for application of educational practice and programs.

The area of advanced specialization in motor learning and biomechanics involves extension of study in terms of substance (acquisition, development, and performance) or in terms of modes of analysis (behavioral, biomechanical, and neurophysiological) or both. A professional sub-specialization is meaningful because it allows for direct educational application of substance in motor learning and biomechanics. Therefore, students interested in special education areas (specifically areas such as COHI) might elect to design their own specialized professional program. This program of study will bridge the gap between substance and research and the application to specific educational settings.

Not only can specialists in motor learning and biomechanics take a sub-specialization in the special education area but the converse is true as well. Our program is designed in such a way that special education students can take a major portion of our core courses in substance and/or research training while at the same time developing competencies unique to their specialization. The important point here seems to be desirability of developing programs of study in such a way that conjoint learning and research experiences are easily worked out. This seems especially true when working within such areas as COHI where much of the learning strategy is related to understanding psychological, morphological and environmental variables and constraints.

The Conjoint Relationship Between the Special Education Area of COHI and Motor Learning and Biomechanics

Much of what has been stated above has implied a close relationship between areas of special education and motor learning and biomechanics. It is abundantly clear that when appropriate resources within the institution are available, departmental boundaries should be

eliminated so the student (and faculty) might benefit from differing perspectives, ideas and approaches. To this end, Teachers College, Columbia University has encouraged conjoint departmental programs and projects. Specifically, the Special Education Department and the Motor Learning and Biomechanics Program in the Department of Physical Education has attempted to work out this relationship. Conjoint programs and projects are vital to the lifeblood of the institution because they encourage creative and innovative thinking on the part of both students and faculty. We need to shift away from the pervasive possessiveness so common to departmental concepts and move toward developing opportunities for scholarship in common areas of human understanding. Bringing together specialists in diverse areas and students from a variety of backgrounds, and the combined tools and techniques of scholarly investigation and expertise should lead us toward answering the really compelling problems confronting education in general, and the more specialized questions in specific specialized problem areas.

With specific reference to training specialists in COHI, the areas of motor learning and biomechanics (as defined at Teachers College, Columbia University) might contribute the following kinds of understandings:

1. Basic concepts related to and concerning goal-directed movement. These concepts are important to understanding perceptual-motor development and function of atypical children.
2. Taxonomy of movement patterns, their description, classification and analysis. Working with the atypical individual specialists are more and more relying upon specific perceptual-motor tests and evaluative procedures to indicate the nature of the difficulty or impairment.
3. Information processing and response mechanisms in the human system–differences between normal and atypical populations; the meaning of stimulus detection, information processing and behavioral response in relation to detection of perceptual-motor and intellective dysfunction.
4. Basic concepts related to the nature of motor skill acquisition and performance–the nature and meaning of coordination and regulation of skilled movement.
5. Environmental and morphological factors affecting the biomechanics of motor skill acquisition and performance–structure/function relationships.
6. Biomechanics and movement patterns in locomotion–so much of the work with COHI children involves various locomotion activities that the underlying patterns and biomechanics seem important.
7. Motor learning and biomechanics in school learning–handicapped perceptual-motor dysfunction, visual impairments, mental retardation.

In summary, I would propose the following as suggested points of concern:

1. The need for the establishment of conjoint program and project relationships between areas of related interest. COHI is concerned with the education of

handicapped individuals. These individuals often operate under severe morphological constrains; motor learning and biomechanics is a substantive area of study which can contribute theoretical and practical understanding for the student to apply to work with the handicapped.

2. There seems to me to be a real need for students concerned with education of normal or atypical populations to understand the nature of movement and its relationship to the environment. Thus, attention might be given to understanding the role of the environment in controlling movement patterns of the moving organism. Further, with atypical populations (as with normal) it seems essential to understand what the patterns are and how they are matched to various environmental conditions.
3. More research is needed on a conjoint basis between COHI and motor learning and biomechanics. There is a need for the development of a systematic research program designed to substantiate existing practice and, more importantly, to ask and answer questions which may help in establishing innovative and creative practice.
4. The conjoint research, training of specialists, and problem solving might best be accomplished through establishment of learning centers which would encompass scholars, researchers, students and practitioners from a variety of related areas of study, *i.e.*, engineering, architecture, motor learning, special education, psychology, etc.
5. Students working at the doctoral level need to have more research training. Training in research (as for the practitioner) needs to begin as soon as the student enters the program of study. The training and practice in research then go hand in hand with the substantive and independent study.
6. In developing programs of study (primarily at the doctorate level) in special areas like COHI, it is important to maximize the opportunity for students to develop their own study plan (around a minimal substantive and research core) which meets their individualized needs and professional aspirations.

APPENDIX B

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APPENDIX C

Pre-Institute Questionnaire

PARTICIPANTS' OPINIONS FOR CONSIDERATION
AT THE INSTITUTE

A. THE POPULATION

Who are today's crippled and otherwise health impaired?

What are the major problems inherent in their education? How do these problems differ in kind and intensity from those of non-handicapped children and those of other groups of exceptional children?

Two major changes or trends in the education of crippled and other health impaired populations, as I see them, are:
a. Within the past 5-10 years
b. On the horizon

At what age should COHI children first be included in special education programs?

Toward what goals should their education be directed? How do these goals differ from those set for other children, if at all?

To what extent and under what circumstances do you feel this population can be integrated into regular education programs?

How does education of this population relate to
a. The education of other exceptional children?
b. The education of all other children?

What role(s) do voluntary agencies now appear to be playing in the education of COHI populations?

B. THE TEACHER

List, in rank order, the most important functions of teachers of crippled children.

How do you see new staffing patterns and use of educational personnel other than teachers affecting teacher roles and performance?

List, in rank order, the most important competencies for effective teacher performance in this area of special education.

What is the most important special competence required for a teacher of the COHI working with

a. Preschool children?
b. Elementary age children?
c. Secondary school age youth?
d. Post high school populations?

In what way(s) and to what extent do the following influence special education planning and programming?

a. The nature of the handicapping condition.
b. The ecology of the child.

C. PROFESSIONAL PREPARATION: THE TEACHER

What do you envision as the three most promising practices or trends in teacher preparation in this area of special education?

What are the most pressing problems you have noted in practicum experiences?

What would you suggest as a promising direction for student practica?

What do you see as your immediate and/or long-term goal(s) in bringing about improvement of teacher preparation programs in this area?

What is the demand/supply ratio of teachers of COHI in your geographic area?

How can we better recruit more outstanding teacher candidates?

Do teachers in this area of special education need preparation beyond that required of all teachers? Comment.

Could a person trained in special education, but not as a specialist in crippled, function successfully in this area? Comment.

D. OTHER PROFESSIONAL PERSONNEL: SUPERVISORS AND ADMINISTRATORS

What do you feel are the three most important unique competencies and the consequent special preparation needed by

a. College teachers?
b. Supervisory personnel?
c. Administrative personnel?
d. Research personnel?

What appear to be the most promising practices in the preparation of supervisory, administrative and/or college personnel working in programs for the COHI?

Pre-Institute Questionnaire

In what areas do you feel improvements should be made in these leadership preparation programs?

What competencies seem most important for professors working with doctoral students in this area?

What do you see as promising trends in doctoral study?

What do you see as the present status of research in this area?

Are more researchers needed? How can we prepare them? How can we attract them?

List in rank order the three problems that merit immediate research attention in the area.

APPENDIX D

Institute Plan and Materials

SCHEDULE OF INSTITUTE ACTIVITIES

Wednesday, December 9, 1970

Status and Trends

General Session I: The Education of the Crippled and Health Impaired

Speaker: Kenneth Wyatt
One Dickens of a Christmas Carol

Thursday, December 10, 1970

Education of COHI Populations

General Session II: COHI Populations

Speakers: Richard Outland
Crippled and Other Health Impaired–Trends in Population Characteristics and in Meeting Educational Needs

Frances Berko
An Effort to Teach the Multiply-Handicapped Child

Robert Stone
Hospital Populations

Discussion Groups, Session I: Identification and Coordination

Topics: Infant Education
Integration
Teacher Role
Interdisciplinary Function

General Session III: Instruction for COHI

Speaker: Jerome Rosner
Individualization of Instruction

Discussion Groups, Session II: Programming for COHI

Topics: Differential Placement
Accountability
Continuity of Services
Gifted Populations
Multiply-Handicapped

General Session IV: Related Research

Speaker: Herbert Rusalem
The Future of COHI as Viewed in a Research Frame of Reference

Friday, December 11, 1970

Teacher Education

General Session V: Innovations in Teacher Education

Speaker: June Bigge
Systems of Precise Observation for Teachers

Discussion Groups, Session III: Knowledge and Skills

Topics: Techniques Unique to COHI Children
Techniques Common to Special Education

Discussion Groups, Session IV: Preparation of Teachers

Topic: Development of an Innovative Program for the Preparation of Teachers

Saturday, December 12, 1970

Leadership Preparation

General Session VI: Doctoral Programs

Speaker: Francis Lord
Doctoral Study in Special Education with Special Reference to the Area of the Preparation of Teachers of Crippled and Health Impaired Children

Discussion Groups, Session V: Organization of Post-Masters Programs

Topics: Administration
College Teaching
Research
Supervision

Discussion Groups, Session VI: Directions for Change

Topic: Recommendations to the Bureau for the Education of Handicapped

General Session VII: Summary and Conclusions

Speakers: Herbert Rusalem
Frances P. Connor

PROBLEMS FOR CONSIDERATION DURING THE INSTITUTE

DISCUSSION GROUP SESSION I
Identification and Coordination

How can educational programs for COHI children be organized and administered to assure continuing and comprehensive education for the total range of COHI children and youth?–Personnel required and roles to be played?–Program modifications possible?–National efforts to be proposed?

What is (are) the role(s) of the teacher in the identification of and programming for COHI infants and pre-school children?–Other personnel?–Procedures and instrumentality?–Curriculum?–Base of administrative/organizational responsibility?

Integration: for whom, when, and how? What are the factors which determine placement of COHI children in regular classrooms? By whom is the determination made?–Problems to be overcome?–And how?

How can the coordination of an educational program with the community specialists be effected? To what extent do(es) the emphasis(es) change with age and/or severity of disability?–Organization?–Responsibility?–Teacher role(s) and function?–The populations

served? (gifted, retarded, severely multiply disabled, mildly disabled with frequent medical absences)

How can interdisciplinary function as it relates to the education of the COHI be more effective than it now appears to be? To what extent do(es) the emphasis(es) change with age and/or severity of disability?–Organization?–Responsibility?–Teacher role and function?–The populations served? (gifted, retarded, severe multiply disabled, mildly disabled with frequent medical absences)

How should educational programs for COHI children be organized and administered to assure continuing and comprehensive education for the total range of COHI children?–Personnel required and the role(s) they play?–Program modifications possible?–National efforts to be proposed?

What should a screening program for COHI infants and young children include?–Means employed?–Personnel involved?–Base of administrative/organizational responsibility?

Assuming optimum physical school environment and available special transportation, what factors might still prevent or impede a COHI child's effective participation in a regular classroom? Suggest means of dealing with these impediments.

DISCUSSION GROUP SESSION II
Programming for COHI

Considering differential placement (*e.g.*, regular classroom membership, home instruction, special class, resource teacher program) what appear to be among the most promising and/or innovative practices in the education of COHI populations?

Education of COHI populations *for what?* To what extent could this field face a test of accountability? What specific steps might be taken to determine the effectiveness of educational programs for COHI children?–of teacher education programs in this area?

What can be done to prevent unnecessary gaps and redundancy (or boredom) in the education of COHI children who spend frequent, but brief periods of time, for medical or other administrative reasons, in hospitals, at home, in a regular grade and/or special classes?–Personnel?–Organization?

Where do severely disabled gifted COHI children fit into the educational organization?–Problems?–Goals?–Preparation for college?–Self-fulfillment?–Responsibility base?

Suggest means for organizing a program for *COHI* children *with other* major disabilities, *e.g.* deafness, blindness, severe emotional disturbance, perceptual impairment, severe mental retardation–Personnel–Program–Responsibility.

DISCUSSION GROUP SESSION III
Knowledge and Skills

Identify the knowledges, skills and/or educational management techniques unique to the preparation of teachers of the COHI children.

What knowledges, skills and/or educational management techniques essential to or promising in the education of COHI children are common to all special education teachers?

DISCUSSION GROUP SESSION IV
Preparation of Teachers

The participants appear to agree that COHI teachers should have in-depth understanding of children and of the educational implications of COHI conditions as well as the mastery of assessment and instructional techniques specific to achievement of optimum education for COHI populations.

Develop an innovative program for the preparation of teachers of COHI populations. Incorporate into the proposal existing promising practices as well as creative ideas which have not as yet been applied in COHI training programs. Include suggestions for evaluating such a program.

DISCUSSION GROUP SESSION V
Organization of Post-Master's Programs

Is there or can there be an effective COHI doctoral program to prepare administrators in this field? If so, describe the program in terms of its goals, its content (body of knowledge and practice), and the means of determining its effectiveness and contribution to the field.

Is there or can there be an effective COHI doctoral program to prepare college teachers? If so, describe the program in terms of its goals, its content (body of knowledge an; practice), and the means of determining its effectiveness and contribution to the field.

Is there or can there be an effective COHI doctoral program to prepare researchers in this field? If so, describe the program in terms of its goals, its content (body of knowledge and practice), and the means of determining its effectiveness and contribution to the field.

Is there or can there be an effective COHI doctoral program to prepare curriculum designers and instructional supervisors? If so, describe the program in terms of its goals, its content (body of knowledge and practice), and the means of determining its effectiveness and contribution of the field.

DISCUSSION GROUP SESSION VI
Directions for Change

Generate as many suggestions, recommendations and/or directions as possible for the USOE, Bureau for the Eudcation of Handicapped in the operation of its training program.

EVALUATION

1. How would you rate the overall effectiveness of the Institute?
   ___ Outstanding ___ Very Good ___ Good ___ Fair ___ Poor
2. Were the prepared papers helpful in providing focus for the discussion groups?
   ___ Yes ___ No ___ Somewhat ___ No Response
3. Would you have preferred more of such papers?
   ___ Yes ___ No ___ No Response
4. Were the participants prepared to contribute to the discussions
   ___ Yes ___ No ___ No Response
5. Did the inclusion of participants from different fields enhance the discussion?
   ___ Yes ___ No ___ Somewhat ___ No Response
6. Was the size of the discussion group appropriate for discussion
   ___ Yes ___ No ___ No Response
7. What is your preference for discussion group organization?
   ___ Rotation of participants
   ___ Stable groupings
   ___ Some combination of above
   ___ No Response
8. Was sufficient time allotted for each session and discussion?
   ___ Yes ___ No ___ No Response
9. Was the pre-institute questionnaire helpful in establishing the focus of the Conference?
   ___ Yes ___ No ___ No Response
10. Were the daily summaries representative of your thinking?
    ___ Yes ___ No
11. Was there sufficient time to accomplish the objectives of the Conference?
    ___ Yes ___ No ___ No Response

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